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REPORT OF THE PRIVATE SECTOR ADVISORY PANEL ON INFRASTRUCTURE FINANCING

TO THE

COMMITTEE ON THE BUDGET
UNITED STATES SENATE

MARCH 1989

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July 8, 1987

To the Members of the Committee:

Two years ago, a Private Sector Advisory Panel on Infrastructure Financing was established by the Senate Budget Committee to advise the Committee on the role of the Federal government in financing future infrastructure facilities. In May of this year, the Advisory Panel released its findings to the Committee and that report is reprinted here, in full.

The Budget Committee assembled the Private Sector Panel in response to Congressional Budget Office and Joint Economic Committee estimates that there will be a $240 billion to $448 billion shortage of funding for infrastructure initiatives nationally by the year 2000. In an effort better to understand and more adequately address the escalating infrastructure financing crisis, the Committee requested that the panel study the history of governmental responsibility for infrastructure funding, the impact of the shift in financing responsibility from the Federal level to state and local governments and the potential for new and innovative infrastructure funding mechanisms.

The Panel's report provides important insight with respect to trends in infrastructure funding over the past few decades and with regard to projected funding shortfalls in the coming years. The study also sheds light on the fact that despite efforts at the State and local levels to develop new debt instruments, credit enhancements and user fees, strong Federal involvement is essential if we hope seriously to come to grips with this pending national crisis. Finally, the study outlines an assortment of mechanisms to address the serious and growing shortfall in national infrastructure funding.

Despite the numerous useful recommendations offered by the Panel the report is silent on the most controversial and difficult issue that must be addressed by Congress if we are to make headway in addressing the very serious infrastructure financing problems outlined in the Panel's work. The study fails to identify precisely how the various infrastructure initiatives should be funded. Although the report suggests that revenues be raised, the recommendations offer no guidance with respect to specific revenue options that should be considered. Listed in the report as a means of funding capitalization for infrastructure projects is the diversion of existing public works funds. However, with respect to the specific programs the Panel recommends, the study states that funding should not supplant existing levels of investment in infrastructure. Thus, the report avoids the hard choice of deciding which programs may have outlived their usefulness or which existing programs might be duplicative of initiatives proposed by the Panel.

This year, the Senate and the House Budget Committees spent almost six full months attempting to fashion a budget for the 1988 fiscal year. Negotiations on next year's spending plan have involved some very hard choices. In order to fund several high priority education, health, and infrastructure initiatives, while achieving significant overall spending reductions, trade-offs had to be made. And the selection of programs to be reduced in order to increase funding for others has been a difficult and lengthy process. Identifying activities to receive enhanced funding is therefore only half of the battle.

In spite of these shortcomings, the Private Sector Panel's conclusions will, nevertheless, be useful in focusing attention on the fact that the availability of adequate basic public facilities is essential for the continued productive capacity of the American economy. And that a revived Federal involvement will be essential to address these concerns since State and local governments alone lack the ability to address the issue equitably and comprehensively.

I thank the Advisory Panel for its hard work and commend them for their thorough review of the problems that lie ahead. It is my hope that the recommendations outlined herein are useful in stimulating the debate on this very important and urgent concern.

Sincerely,

Lawton Chiles

Lawton Chiles

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EXECUTIVE SUMMARY

America has shortchanged its future.

We need better highways. We need to expand our sewage plants. We need improved garbage disposal, safer bridges, more efficient air traffic systems, cleaner drinking water.

The Panel is convinced that America has fallen behind in building the sinew of infrastructure necessary for the future. Following considerable analysis of methods to finance future infrastructure, the Private Sector Advisory Panel on Infrastructure Financing recommends a number of important initiatives, including:

- Creation of a new Infrastructure Trust Fund, financed with $25 billion in special federal contributions over five years, and dedicated to capitalizing state infrastructure banks and revolving loan funds;
- Creation of a new, tax-exempt infrastructure bond to help local governments meet local needs; and
- Support for public/private partnerships in constructing and managing infrastructure facilities.

Background

To a disturbing extent, America's public facilities are defined by words such as "neglected," "decaying," "inadequate."

Each of us--all 240 million--at some point in our daily routines becomes aggravated with the problem of a clogged highway, a leaking water system, a stream polluted by untreated sewage, an aging subway car. Our roads and freeways are in disrepair. More frightening, we hear too frequently of collapsed bridges.

The physical underpinnings of America's economy have eroded.

Public spending on roads, bridges, and other types of physical infrastructure has declined steadily since the late 1960's. As a percentage of our gross national product, combined annual, federal, state, and local infrastructure investment fell from 3.5 percent of GNP in 1967 to about 2.7 percent of GNP in the mid 1980s. That percentage continues to drop.

Our failure to repair, replace, and expand essential public works is as glaring in the Sunbelt cities of the Southwest as in the older industrial cities of the Northeast.

The accumulated backlog carries a cost of overwhelming proportions. The shortage that will occur between now and the year 2000 has been estimated at $240 billion by the Congressional Budget Office. The Joint Economic Committee of the Congress put the shortfall over that period at $448 billion. Other estimates range much higher. Whatever number is accurate, it is astronomical. The situation appears certain to become more serious if action is not taken.

Why? The reasons are diverse. To a great extent, we see the consequence of choices made at every level of government in the allocation of resources. Instead of spending tax dollars on public works at the rate utilized for many years, America shifted its goals. While such a choice was never presented directly to America's taxpayers, it has been a decision at all levels of government, a decision that robs the future to pay for today.

Since the earliest civilizations, economic growth moved forward with public works. For America, the canals of the Northeast were followed by railroad lines stretched across the continent. We raised dams so the desert might bloom. We stitched together a system of interstate highways to speed travel. Public investment in public facilities added to our productivity, to economic growth, to a better life for all Americans.

As we enter the third century of the Republic, this Panel is convinced that a new national commitment to public works--to our infrastructure--is absolutely essential.

Senator Pete V. Domenici established the Private Sector Advisory Panel on Infrastructure Financing to advise the Senate Budget Committee on the role of the federal government in financing future infrastructure facilities.

The Panel was asked to examine the potential for state and local investments in infrastructure, review new market instruments and debt financing mechanisms, determine the usefulness of new state and local financing institutions such as infrastructure banks and revolving funds, recommend long-term, predictable sources of funding, and investigate the potential for private sector investment in public works.

Simply put, the challenge was to examine options for infrastructure financing, then recommend effective ways to select and fulfill the best option.

The Panel reviewed activities in several states and held a series of hearings to gain insights and information. The states which participated in case studies included Florida, Indiana, New Jersey, Texas, and Washington. Public hearings were held in Washington, D.C., Albuquerque, Trenton, Indianapolis and Seattle.

The Panel did not attempt to measure the level of need for increased infrastructure funding which has been well-documented in studies by the Joint Economic Committee and the Congressional Budget Office. Instead, the Panel focused on the evolution in governmental responsibility for infrastructure financing, the impact of that shift on state and local financing, and the potential for new and innovative financing mechanisms to meet capital needs.

Should America rely more on the federal government, or on the state and local governments, or on private enterprise? Should we embark on a new wave of federal spending? Should we look for new, creative alternatives in public spending?

Based on its review, the Panel has reached the following conclusions.

CONCLUSIONS

- The continued productive capacity of the American economy depends on the availability of adequate basic public facilities. Rebuilding, revitalizing, and expanding America's public infrastructure is imperative to our future.
- America's need for more and better public facilities is a national issue that must be addressed nationally. Public works are not only essential for interstate and international commerce, they are essential for the health, safety, and general welfare of the American people.
- A significant federal role in building and rebuilding our nation's infrastructure is altogether appropriate. Since both the states and the local governments lack the capacity to address this need equitably and comprehensively, a revived federal involvement is essential.
- The federal contribution to infrastructure financing has declined. With the sole exception of outlays earmarked from motor fuel tax receipts in the Highway Trust Fund, federal infrastructure spending has diminished, with state and local interests bearing an increasing share of the burden.
- The financial responsibility for meeting America's infrastructure needs has fallen most heavily onto state and local governments. In six categories of public works investment--highways, water supply, wastewater treatment, aviation, mass transit, and water resources--annual federal spending recently was $25.5 billion, compared to non-federal annual spending of $63.6 billion.

- As the federal government shifted priorities away from infrastructure financing, new federal laws have mandated state and local compliance with new requirements for water pollution control, clean drinking water, and the clean-up of hazardous wastes. While essential for the public welfare, these new laws provided little in additional funding to assist in meeting the considerable cost of state and local compliance.

- States and localities have faced not only the federal shift in priorities but have had to contend with the "taxpayer revolt" which in many localities capped property taxes which are a primary source of revenue for local governments. To contend with the resulting revenue shortfall, local governments have increasingly turned to the bond market to borrow funds necessary to finance infrastructure facilities.

- Within the past decade, the annual volume of tax-exempt debt issued for public works rose from just over $6 billion in 1977 to four times that level. State and local governments turned to new forms of loans, debt packages, credit enhancements, and other forms of financing. User fees and other exactions also have become increasingly popular, and many localities are exploring the potential for public/private partnerships.

- Yet these initiatives have been insufficient. Demands for public facilities have continued to exceed the ability of state and local governments to respond. State and local governments lack the resources and the flexibility to shoulder the expanding burden of financing America's infrastructure need. Compared to the dimensions of need for new and improved public facilities, state and local resources are insufficient.

- Infrastructure banks, revolving loan funds, and other innovative funding systems are being used effectively in a number of states. They offer the potential to become a major sustaining source of financial assistance for local infrastructure investments, when sufficiently capitalized.

- Over the years, the federal government has, through the tax code, encouraged investments in public works indirectly through the availability of tax-exempt municipal bonds, favorable depreciation allowances, and investment tax credits. Historically, this indirect federal contribution has provided a substantial and valid subsidy of state and local infrastructure financing.

- In recent years, however, increasingly severe restrictions on the use of tax-exempt bonds have made this form of infrastructure financing increasingly difficult. The tax-exempt bond provisions in the 1986 Tax Reform Act are even more restrictive. These provisions will reduce the volume of state and local debt financing, and make even traditional governmental bonds more difficult and more costly to issue.

- The new tax code thus complicates and further confounds efforts by state and local government to fill the breach in infrastructure financing.

- Increasing use of user fees to finance project costs, as well as supporting adequate operations, maintenance, and repair budgets, is sound policy, and should be incorporated into project planning.

- Some of the newer mechanisms for raising special revenues, such as development exactions and impact fees, are effective in areas of rapid growth. These, however, hold limited appeal for areas of slower growth or declining economic base.

- Federal regulations and compliance standards may reduce local flexibility and constrain or frustrate the application of cost effective and innovative solutions to local infrastructure needs.

- The trend toward private investments in public works facilities and services should be encouraged through federal tax provisions and federal program implementation.

Based on these conclusions, the Panel offers the following recommendations, in order of priority:

RECOMMENDATION ONE

Congress should create an Infrastructure Trust Fund to capitalize infrastructure state banks and revolving loan funds.

Legislation should be enacted to create a trust fund to distribute among the states $5 billion annually for each of five years. This money should be raised from a dedicated, broad-based, new source of taxation, then placed in the Infrastructure Trust Fund for distribution by formula that, among other things, stresses population and land area.

This Federal Trust Fund contribution would go to recipient states once they establish a revolving fund or infrastructure bank to finance needed infrastructure facilities within the state. The contribution from the Trust Fund would provide 80 percent of the capital for each bank or fund, with the state required to contribute the remaining 20 percent.

These revolving funds would provide loans or credit enhancement to build and maintain highways, streets, roads, mass transit, wastewater collection and treatment, solid waste disposal, water supply facilities, and other pressing infrastructure needs.

The states would not be required to repay these Trust Fund grants. But to assure the revolving nature of the state funds or banks, local governments would be required to repay at least the principal amount of all loans.

In the Panel's view, a Trust Fund is preferable to other possible forms of federal assistance such as increased categorical grants. Properly structured, the state banks or funds would replenish themselves, serving as continuing sources of investment capital.

No additional federal capital would be required following the fifth year of the program to make the revolving system work.

Clearly, the total sum available for construction will be contingent upon both the initial capital, the level of state matching funds, and the terms and conditions of loans, guarantees, and other forms of assistance. The Panel estimates that within 15 years, the initial federal capitalization, together with the 20 percent state match, could produce close to $75 million in infrastructure investment, assuming the loans were repaid at 7 1/4 percent interest. Alternatively, if the same amount of capital--$25 billion in federal grants plus $6.25 billion in state matching funds--were loaned over 10 years, with no interest charged, the program would generate $40.3 billion in new infrastructure work. It must be underscored that America's infrastructure needs far exceed the scope of a program with these assumptions, but this infusion of new capital will create a funding device available in perpetuity.

Each state revolving fund or infrastructure bank should be available for new construction, as well as for rehabilitation and major maintenance and repair of existing facilities.

The additional funds made available under this recommendation must be just that, additional funds. These funds must not be used to supplant existing federal and/or non-federal investments in infrastructure. This is a program to reduce the huge backlog, not simply provide a different source of funding for work that would be accomplished anyway.

To be eligible for funds from a state bank, a local government should be required to document its needs and established capital plans and budgets.

Under this recommendation, the federal government would serve as a catalyst in responding to our national need for infrastructure financing without adding permanently to the size of the federal bureaucracy.

RECOMMENDATION TWO

Congress should create a new category of tax-exempt bond, an infrastructure bond.

With or without an Infrastructure Trust Fund to pump new cash into infrastructure, tax-exempt financing must continue to be available if state and local governments are ever to begin to meet their infrastructure needs.

State and local governments rarely have the funds on hand to finance expensive infrastructure projects. Therefore, they increasingly have had to borrow to pay for needed public improvements. Total outstanding state and local debt in recent years has increased significantly, now totaling more than one-half trillion dollars. A major portion of this increase has been in so-called "private activity" debt.

In the 1986 Tax Reform Act, Congress restricted the scope and availability of tax-exempt financing for private purposes. In seeking to give all taxpayers a fair shake, Congress went too far, in the view of the Panel. The restrictions imposed by Congress will affect not only bonds used for private purposes, but also, many bond issues which fall into the private activity category but are used for traditional governmental purposes.

Under the 1986 Tax Reform Act, vital bond issues for sewage collection and treatment, solid waste disposal, and water supply facilities, among other legitimate public purposes, will often fall under the classification--and limits--of "private activity" bonds. Such bonds are subject to state-by-state volume caps, based on population.

If the volume of bonds issued goes above the annual cap the Act imposes on each state, such bonds will no longer be tax-exempt issues. In which case, financing these necessary facilities will be costlier to the issuer and to the users.

To offset this unintended result, the Panel recommends the creation of this new category of governmental bonds, "infrastructure bonds," which would be excluded from the definition of "private activity" bonds under the federal tax code.

Issues of infrastructure bonds should be allowed to retain reasonable investment earnings on such debt issues. The alternative is simply to pile greater costs onto local governments, and higher fees on the local users.

RECOMMENDATION THREE

Public/private partnerships must be encouraged in infrastructure financing.

Private investment in public facilities offers a sound opportunity to increase substantially the capital available for infrastructure investments.

The potential for public/private partnerships in solid waste disposal, wastewater treatment, water supply, transportation, and other areas has been demonstrated in recent years. But federal action is needed to encourage this potential.

Federal executive departments and agencies should follow the example of the Environmental Protection Agency and the Department of Transportation by actively promoting and facilitating public/private partnerships in which the private sector develops, operates, and in some cases owns, needed facilities in cooperation with local government.

These opportunities are most evident in projects such as water supply or sewage treatment. The low and slow rate of return on such facilities requires an early and rapid tax write-off to maintain a flow of cash sufficient to attract private investment. A faster rate of depreciation under the federal tax law would encourage private investment and participation in the development of such projects.

Sewage treatment and water supply facilities should be placed in the same category with solid waste facilities in the Accelerated Cost Recovery System. Depreciation should be allowed over seven years generally, and over ten years with tax-exempt bond financing.

A federal clearinghouse should be established to coordinate and distribute information on initiatives at every level to encourage public/private cooperation in confronting our infrastructure problems.

RECOMMENDATION FOUR

Federal technical support should be emphasized for all areas of infrastructure development.

Whatever new financing initiatives are undertaken by the federal government, whether in response to these Panel recommendations or other proposals, state and local governments will continue to carry the principal responsibility for building most public works.

Adequately funded, state and local governments can fulfill this responsibility. They can achieve it with greatest efficiency if provided additional technical support from the federal government. This support will be particularly valuable at the local level.

In the administration of various categorical grant programs, federal agencies have accumulated vast technical experience and expertise. As some of these grant programs wane, this wisdom may be lost. This must not occur. New emphasis should be given to make this federal experience and expertise available to state and local governments.

In this way, non-federal officials should be able to make better decisions on design, development, operation, maintenance, and other aspects of building and rebuilding needed public facilities.

RECOMMENDATION FIVE

Existing Federal Trust Funds for infrastructure must be preserved as an essential federal component for constructing infrastructure.

The existing highway, airport, and waterway trust funds help assure a more stable and reliable level of funding for certain infrastructure purposes. As devices for revenue collection and allocation, dedicated trust funds are very effective. They promote better planning, management, and budgeting at the state and local level.

The utility of trust funds to assist state and local capital investment planning is best served when disbursements are dependable and timely, and Congress should act promptly on reauthorizations and annual appropriations.

RECOMMENDATION SIX

Federal agencies should review standards and regulations related to infrastructure programs.

A review of federal regulations is needed to assure that the standards and regulations permit and encourage cost-effective solutions, plus innovations in design, technology, and response, and in no way frustrate or discourage non-federal initiatives.

In particular, a thorough review is needed of federal compliance standards to assure that life-cycle cost analysis is encouraged, that new investment is not encouraged at the expense of efficient operations of existing facilities, and that innovative techniques with the promise of superior performance have every opportunity to demonstrate their value.

THE PANEL OFFERS THESE SIX RECOMMENDATIONS NOT AS A SOLUTION TO ALL OF OUR INFRASTRUCTURE PROBLEMS, BUT AS A STEP--A MAJOR STEP--TOWARD OVERCOMING THOSE PROBLEMS.

REPORT OF THE
PRIVATE SECTOR ADVISORY PANEL
ON INFRASTRUCTURE FINANCING

OVERVIEW

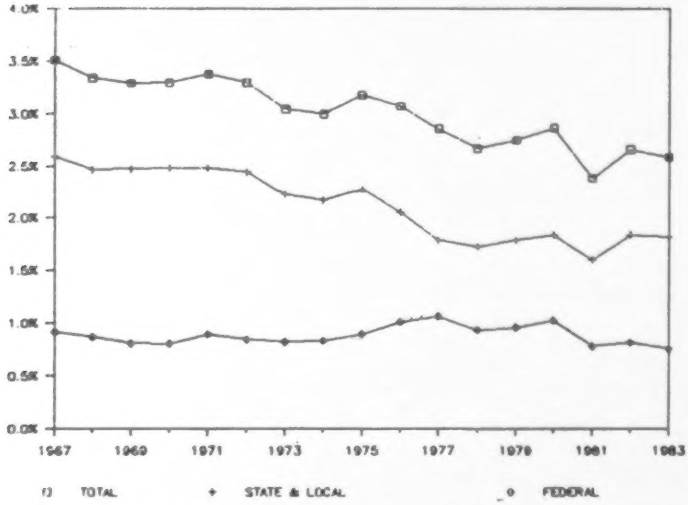
Changing Federal Role

Traditionally the federal role in national infrastructure development has been defined in terms of large national purposes. From western reclamation to the developmental projects of the 1930s, and the more recent experience with building the Interstate Highway System and cleaning up the nation's waters, the financing of public works has been a tool for accomplishing important national purposes.

Western settlement, agricultural development, economic recovery, national security, commercial expansion, and environmental control are among the purposes that have marshaled and directed federal resources for public works investment. Some of these purposes have long since been accomplished, others are nearing completion, and still others remain unfinished. The task ahead at the federal level is to redefine objectives, identify current and future national purposes, and refine and reorient national programs to meet those new goals and objectives.

Measured as a percentage of Gross National Product, the combined annual federal, state, and local investment in infrastructure has been on the decline since 1967. As Figure 1 indicates, investment has drifted from 3.5 percent of GNP in 1967 to around 2.7 percent in 1983, the last year for which figures on state and local investment are available.

Figure 1
Government Investment in Public Works
As a Percent of GNP



Source: Chambers Associates Incorporated from Congressional Budget Office data (unpublished).

Federal outlays dropped in 1981, but have remained relatively stable since then even though the funding characteristics and program purposes have changed significantly. Categorical grants for public infrastructure have diminished sharply, while increased reliance on user fees and the dedication of user-related revenues to special purpose trust funds has been on the increase, accounting for the relative stability in the total level of federal outlays in this area over the past five years.

The increase in the federal tax on motor fuels from 4 cents per gallon to 9 cents in the 1982 Surface Transportation Assistance Act has more than doubled the amount of money available for construction and improvement in the Highway Trust Fund. Without the increase in the Highway Trust Fund, total federal spending for infrastructure would have been in a major decline.

The trust fund device is also used to secure dedicated revenues for the capital improvement and operations of the national airport and air safety program, the Urban Mass Transit program and, most recently, the funding of harbor maintenance and the reconstruction of locks and dams on the inland waterways. Together these expenditures from the several trust funds make up about 60 percent of the federal outlay for infrastructure.

These trust fund devices have two major advantages. First, they collect fees in the form of excise taxes from the user, assuring that those who use or benefit from the facility are the ones who pay. Second, and probably more importantly from the perspective of public investment, the trust funds protect the integrity of revenue for its dedicated purpose, assuring a reasonably stable level of funding for specific areas of infrastructure investment, which in turn facilitates planning and better administration, especially at the state and local level.

Those public works accounts not funded from special dedicated revenues are extremely vulnerable to budget cutting efforts by OMB and the Congress. Under the budget plans of the Reagan Administration, most of the federal infrastructure expenditures funded from general revenues to the Treasury are targeted for discontinuation or substantial phase-down over the next few years.

In other program areas, federal initiatives are emerging that could help support and sustain a level of public investment in infrastructure facility well into the future. The Clean Water Act reauthorization, passed in 1987, provides for the establishment of revolving loan funds in each state to provide loans and credit enhancement to localities for constructing needed wastewater treatment facilities. How well it will work depends on a number of factors, including the extent to which it is capitalized, the terms of the loans and their payback provisions, and the fairness and efficiency with which the state funds are administered.

The concept of a self-sustaining loan fund to assist local governments with their financing needs is a sound one, representing a significant departure from the traditional matching grants approach that has heretofore characterized federal assistance in this area. If it works, it could become a model for development of other public works investment programs. However, the replacement of federal construction program grants with the limited federal capitalization of revolving loan funds does represent a future reduction of federal expenditure in this area.

There has also been a much publicized effort to cut back on the rigidity and intrusiveness of federal regulation. The states and local governments have asked for more flexibility and latitude in carrying out national programs, and in many cases have received it. An exception to this may be in the area of environmental compliance where Congressionally-mandated legal constraints limit state and local discretion. In other programmatic areas, more flexibility has been a crucial factor in permitting the states and localities to respond with innovative approaches. Even so, a more comprehensive assessment of these requirements needs to be undertaken to assure that cost effective and innovative solutions to local problems are not being frustrated or discouraged.

Local Role

The response of local governments to increasing levels of need and responsibilities as well as diminishing federal commitment has been commendable. Local governments have employed a range of mechanisms to either raise additional revenue or otherwise secure necessary financing. Mainly they have avoided property or general tax increases, turning instead to additional bonded indebtedness and such devices as special assessments, impact fees and other exactions. There has also been an increasing reliance on user fees and dedicated revenues, along with a proliferation of special districts and authorities with their own debt capacity secured by user related revenues.

Bonded indebtedness has increased significantly over the past five years. It can be no coincidence that this trend in increased public debt issuance coincides with the inception of New Federalism and the turn-back of responsibilities to the states and local governments. The remarkable shift in the public bond market from a heavy reliance on general obligation bonds to one in which 75 percent of the long term municipal debt in 1985 was in the form of revenue bonds is also indicative of the trend toward more local reliance on user fees and the linking of service costs to the beneficiaries.

The bond market has also been highly innovative in developing new types of debt instruments that meet the particular needs of the borrower, while attracting the investor through such devices as zero coupon bonds, variable rate securities and refinanced debt to take advantage of more favorable borrowing rates and the conditions of a fluctuating market.

Along with taking on an increasing level of responsibility, local governments are also moving to increase their capacity to plan and budget for necessary capital expenditure. A majority of cities, especially larger ones, employ some type of capital improvement budgeting technique to make investment selections and provide a comprehensive inventory of their capital facility, its condition and serviceability. These are generally regarded as useful in identifying the investment consequences of deferred maintenance and in helping local officials make informed investment decisions.

State Response

State aid to local governments for public works amounts to about $7.5 billion a year. The great bulk of this (72 percent) goes to highways, roads and bridges and is raised by the states from motor fuel taxes and user-related fees and licenses. The remaining state assistance goes mainly for airports, sewers and water supply.[1]

States also serve to facilitate and enhance the capacity of local government to meet their own needs. State governments can provide their localities with increased revenue raising capacity, as Arizona has done in allowing counties the option of a sales tax increase dedicated to highway construction.

States can also create and administer infrastructure banks, bond pooling arrangements, and revolving loan funds to assist localities in financing public works as states like New Jersey, Indiana, and Washington have done. They can also take steps to enhance the credit of localities in the public financial market by loan guarantees, interest rate buy-downs, and technical assistance on debt packaging and bonding. A number of states have taken the initiative, and others can be expected to follow.

States also can facilitate local initiatives by revising constitutional and statutory restrictions that limit localities in the amount of bonding and debt service they can carry, raising or reallocating statewide bonding caps, and relaxing or revising state regulation to provide more flexibility to local governments in the way they respond to mandated requirements. Changes in state law and regulation are almost always necessary to facilitate privatization initiatives.

Private Sector Response

One of the more interesting phenomena to emerge in response to high levels of unmet needs, federal funding cutbacks, and local budget constraints is the so called "privatization" initiative. Basically this entails a partnership for the provision of a public service through one or more private sector vendors.

There is nothing unique about public-private arrangements except in the areas of application and some of the arrangements which are developing between the private provider and the governmental entity. The new application of private sector investment in public infrastructure is in the area of environmental control facility and service. Here, the presence of strict federal and state compliance requirements, together with the limited availability of federal and state assistance, has provided new opportunities for private entrepreneurs in the areas of resource recovery from solid waste and, to a more limited extent, the construction, operation, and management of municipal sewage treatment systems. Other areas of private initiative in public works are in water supply, roads, highways, and mass transportation.

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[1] U.S. Bureau of the Census, 1982 Census of Government, Vol. 6, No. 3.

In every case the financial viability of these public-private partnership arrangements has been predicated on the availability of favorable depreciation schedules and investment tax credits, as well as access to the tax-exempt bond market. Recent changes in the tax codes, enacted as a part of the overall Tax Reform Act of 1986, may limit this promising avenue of support for the provision of public works facilities and services.

National Investment Policy

Although the federal role in infrastructure financing has significantly evolved in the past few years, it would be inaccurate to attribute a coherent approach or overall design to this transformation. Mainly it has been a piecemeal, pragmatic adaptation to the new realities of the federal budget and the changing political perceptions about the appropriate hierarchical role of the federal government in domestic policy.

Efforts to assess more cost of a project to the direct beneficiaries, the increasing use of dedicated funds for public works purposes, encouragement of local initiatives, and the emergence of the revolving loan concept in federal programs are developments that should help to assure sustained funding in a number of critical infrastructure areas over the long run. But there are also some major omissions and limitations to the current federal policy that seriously limit its viability as a comprehensive, responsible, and equitable national infrastructure investment approach.

Current federal policy is more adaptable to the needs of the growing and economically prosperous areas of the country. The emphasis is on investment in new structures, but in vast areas of our nation the real need is for repairing, rehabilitating, and upgrading existing facilities.

Likewise, many of the devices that are being employed by local governments to gain developer participation in new infrastructure development are adaptable mainly to growth areas. Communities with a deteriorating economy are seldom in a position to extract up-front contributions and impact assessments from developers.

The federal government does not have existing programs to respond to several areas of emerging need that will require major expenditures over the next several years. Many localities believe that their greatest need for infrastructure funding will be for solid and hazardous waste management, drinking water treatment, and storm water control and treatment. Moreover, these needs are occurring in response to new federal environmental requirements.

Finally, the lack of a comprehensive national infrastructure policy has resulted in legislation that will severely constrain the capacity of local governments to finance their own infrastructure needs. The recently enacted Tax Reform Act limits the access of state and local governments to the municipal tax-exempt bond market and drives up the cost of state and local borrowing for public works investment. At a time when more federal financing requirements, especially for environmental control facilities, are being required of state and local governments, this has the appearance of a policy at cross purposes.

A national investment strategy for public works should be defined. The policy should identify the areas of continuing federal commitment to infrastructure financing, new and emerging areas where federal contribution may be required, and areas where state, local and private initiatives should be encouraged. Moreover, the policy should define the ways and the means for sustaining federal commitments. Federal laws and regulations that limit or constrain state and local capability should be systematically examined and revised.

This report examines the basic components of current national infrastructure policy as implemented at federal, state, and local levels of government. A major focus of the study is on successful and innovative approaches of state and local governments that provide examples or models for the nation. The recommendations that grow out of this study concern the federal role in infrastructure financing as it relates to state and local responsibilities.

I. FEDERAL INFRASTRUCTURE FINANCING

Historically, the United States government has invested in infrastructure as a means of accomplishing large national purposes, including economic recovery.

Westward settlement and subsequent development were facilitated by federal grants of millions of acres of public land as an inducement to railroad companies to push westward across the continent. Federally funded irrigation projects reclaimed the arid deserts of the west, diversifying western agriculture and supplying the essential water and power for the economic growth of the western United States.

Federal infrastructure investment was a key tool in the counter-cyclical efforts to lift the national economy out of the Great Depression. Public works investments of the 1930s left legacies such as the Tennessee Valley Authority, the Upper Missouri River development, the Grand Coulee Dam, the Bonneville Power System, and countless municipal roads, buildings, parks, waterline, and sewer systems throughout the nation.

Since World War II, there have been two major national objectives achieved by heavy federal investment in infrastructure facilities. The first was the construction of a major system of highways connecting the states in a high-speed transportation grid. The second is the national effort, begun in earnest in the 1970s, to restore and protect the quality of our nation's waters. Together, these two programs represent an annual commitment of over $16 billion, or well over half of all federal expenditures for public works.

Each of the above national experiences in infrastructure investment involves a clearly defined objective that enjoys broad public support, exceeds the financial capacity of state and local jurisdictions, and transcends their jurisdictional boundaries. As the means to major national ends, these programs have been enormously successful, demonstrating that where there is a clearly defined purpose with broad public and political appeal, infrastructure investment serves the public interest.

In addition to directing federal resources toward the accomplishment of a national objective, these federally oriented programs have, in most cases, been instrumental in stimulating and influencing public and private sector investment. The federal investment in major roads and highways, for example, has shaped and stimulated patterns of private investment in industry, services, commerce, and housing. New development creates new demand for public services. The federal dollar has defined the pattern for local and state investment in new roads, sewers, and schools to provide access and service to the development that has grown up around interstate routes.

But beyond the creation of new demand, the federal dollar wields enormous influence over the direction and type of public investment in infrastructure facilities. While the annual federal investment in infrastructure represents approximately one-third of the total annual public investment in capital facilities and services, it has a disproportionate influence over how the states and localities direct their own funding and operating dollars. Because of matching fund requirements, regulatory provisions of federal laws, and incentives in federal tax laws that reward certain types of investment over others, the federal presence is ubiquitous in most public investment decisions.

Overall, federal programs and policy in this area are in major transition. Several of the national programs for infrastructure financing are at, or approaching, turning points.

With the changes in tax treatment of state and local debt, the level of indirect federal financing of public facilities will be substantially altered. At the same time there is a perceptible move away from outright federal support and subsidization toward requiring project beneficiaries to participate in cost-sharing arrangements, user fees, and the establishment of adequate operation and maintenance provisions.

The recently enacted omnibus water resources bill makes a significant departure from previous federal water resources programs with new requirements for project cost sharing and new and increased user fees for project beneficiaries.

The provisions in the Clean Water Act reauthorization will terminate the federal grants program for construction of wastewater treatment systems and establish, instead, revolving loan funds, administered by the states, to assist localities in building needed treatment works.

With the completion of the Interstate Highway System almost in hand, the Federal Highway Assistance program will soon come up for major reconsideration and possible redirection. The urban mass transit program also appears to be at a point of major review and possible redirection.

Along with an increasing reliance on user fees, there is a corresponding increase in the establishment of special purpose trust funds to which the fees are dedicated. The new omnibus water resources law sets up a new trust fund for harbor improvement. Likewise, most of the federal highway and airport construction and improvements are funded from the dedicated revenues in earmarked funds.

Program Funding

For the purpose of this discussion, federal investment in infrastructure is defined as the categories of the federal domestic budget dedicated to funding of roads, highways and bridges; construction of municipal wastewater treatment facilities, water supply, and other water resource development such as canals and harbor improvements, irrigation systems, and flood control; and assistance for mass transportation facilities, air transportation facilities, and traffic safety controls.

The elements of these programs are spread across a number of domestic budget accounts, but the bulk of the money is concentrated in only a few programs: (1) the Department of Transportation's Federal Highway, Urban Mass Transportation and Federal Aviation Administrations; (2) the Environmental Protection Agency's municipal construction grants program; and (3) the Army Corps of Engineers' and the Bureau of Reclamation's water resources development programs. These programs account for 99 percent of the total federal budget for infrastructure development.

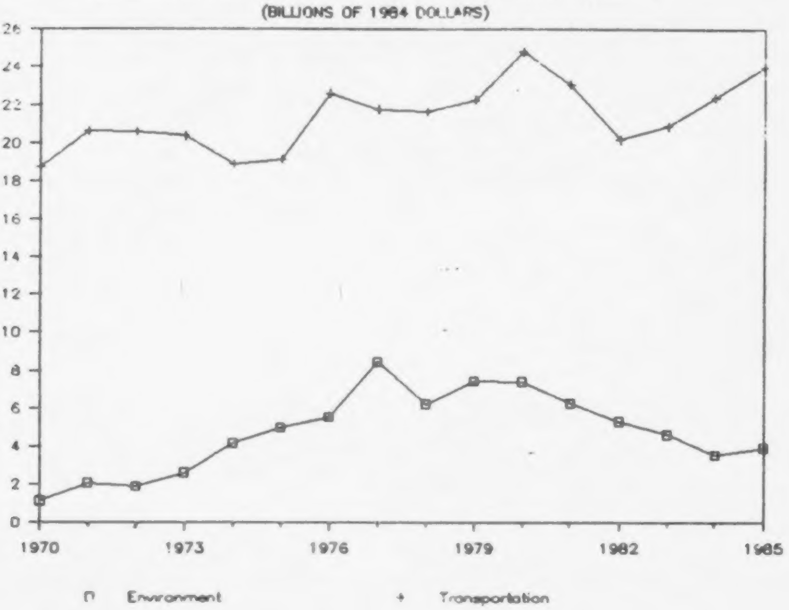
These programs, along with several smaller federal programs aimed primarily at economic or rural area assistance, totaled $28.8 billion in 1985, about three percent of the total federal budget. This percentage has not changed significantly since the late 1960s.

The relative significance of the annual federal outlay for infrastructure can be seen more accurately by comparing it to the "non-defense, discretionary" budget, that portion of the total budget not committed to defense, Social Security, or transfer payments to individuals. The 1985 outlay of $28.8 billion for infrastructure amounted to approximately 23.3 percent of the total non-defense discretionary budget.

Federal dollars go mainly for investment in new facilities or major rehabilitation and repair. Only 21 percent of the total annual federal outlay could be identified with support for operation and maintenance, with nearly three-fourths of this share confined to the areas of aviation and water resources.

Total federal spending on infrastructure has increased somewhat in nominal terms in the past few years. In constant 1984 dollars when adjusted for inflation, however, federal spending has declined from $32.2 billion in 1980 to $27.9 billion in 1985. As shown in Figure 1, when federal spending is identified by category, it becomes apparent that the decline is driven by major reductions since 1980 in environmentally related federal infrastructure programs. Transportation programs also declined from 1980 until 1982, when the excise tax on motor fuels was increased. Since 1982, spending on transportation has increased so that 1985 spending in real terms was approximately equal to 1980 spending.

Figure No. 1
Spending for Transportation and Environment



Source: Congressional Budget Office data (unpublished).
Notes:

a) Environment includes spending on wastewater and water supply

b) Transportation includes spending on highways, water resources, mass transit and airports.

Federal spending on transportation is primarily funded by excise taxes which have been set aside in trust funds which can be spent for no other purpose, while federal environmental spending is from general revenues. This difference in source and the protection provided by the trust fund device are seen as the reasons for the disparate treatment of these programs in the current period of budgetary limitations.

Trust Funds

The significance of the trust fund device to the level and continuity of federal spending for infrastructure cannot be overemphasized. Expenditures from the Highway Trust Fund and the Airport and Airways Trust Fund together comprise around 70 percent of the federal infrastructure funding sources. Conversely, only about one-third of federal spending on infrastructure is appropriated from general revenues.

Receipts into the Trust Funds are fees collected from use-related activities, i.e., motor fuel taxes and airline passenger tickets. The federally managed trusts operate as efficient collection and redistribution mechanisms, distributing money to the states and localities on the basis of needs formulas defined by Congress.

While the revenues are collected as federal excise taxes, they are taxes dedicated to the specific purposes for which the fund was established. They are not transferable to other accounts for other uses. Fund account surpluses are, however, used by the Treasury and OMB to improve the overall federal budget picture, at least on paper.

It is often argued that the trust funds, with their dedicated non-transferable revenues, should not be included in budget summaries (in the parlance of budgetary analysts, "taken off-budget"). But proponents of the off-budget approach have so far been unsuccessful.

There have been recent proposals to turn over some of the revenue raising potential of these taxes to the states. Indiana Governor Robert Orr, for example, argues that since the excise taxes are simply returned to the states for highway construction and maintenance, it would be more efficient to reduce the level of federal taxation, especially on motor fuels, and let the states increase their own gas taxes proportionately. The states would have more discretion in the use of the gas tax revenues and not be at the mercy of the Congress and the Administration to appropriate and release it.

There is support for this "turn back" concept among some of the other states. Governor Baliles of Virginia has become a recent advocate, and the National Association of State Budget Officers supports it.[1] The failure in the 99th Congress to pass legislation authorizing continued funding from the Highway Trust Fund for highway programs, even though funds are available in the Trust, could bring other supporters to the proposal.

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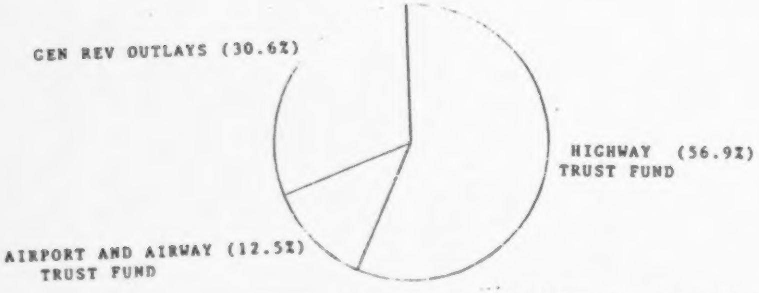
[1] *Washington Post*, Nov. 11, 1986, p. C1.

Figure No. 2
Revenue Sources for Federal Public Works

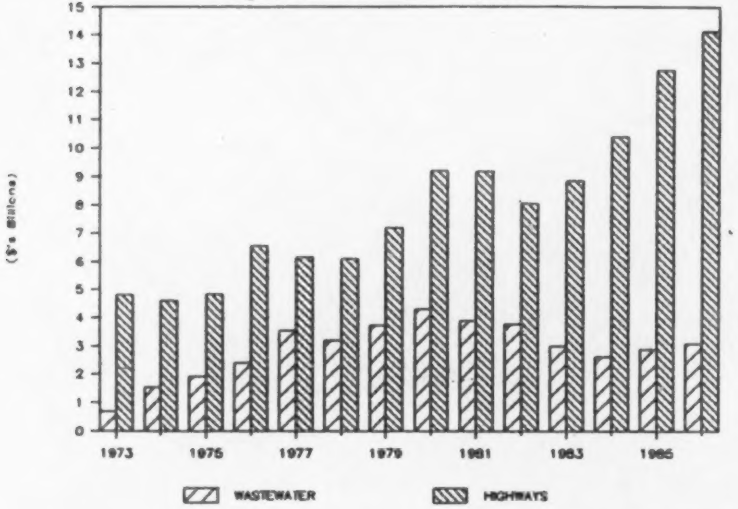


Source: Budget of the United States Government, 1987.

Although trust fund money must also be appropriated by the Congress, the availability of the dedicated funds has provided a more substantial and dependable source of revenue for their dedicated purposes than have the program areas that must depend on the vagaries of annual appropriation requests from general funds in the Treasury. A comparison of the levels and patterns of funding two major federal programs, one solely dependent on trust fund receipts and the other on general appropriations, illustrates this difference.

Outlays for wastewater treatment, which is funded exclusively from general appropriations, reached a high of $4.3 billion in FY 1980 and has since declined. Expenditures from the Highway Trust Fund have climbed in nominal terms, reaching an estimated level of $14.1 billion in FY 1986.

Figure No. 3
Expenditures by Program



Source: Federal Highway Administration and Environmental Protection Agency

Based on this comparison, it is probably fair to conclude that without dedicated revenues maintained inviolate in their trusts, the overall federal outlay for roads, highways, bridges, and aviation would have experienced substantial reductions in the last several budget cycles as Congress struggles to curb the deficit.

When the Trust Fund expenditures are excluded from the federal infrastructure outlays, the federal contribution is decreasing and will diminish further if present legislative and budgetary plans are carried out by the Administration and Congress. Under the legislation which passed Congress in 1987, the federal contribution to wastewater treatment construction is proposed to be phased out completely by 1995. The federal share of financing water resources projects will diminish as up-front cost sharing requirements come into effect. The Administration has also proposed limited federal outlays for urban mass transit to the designated receipts for mass transit in the Highway Trust Fund.

Under this scenario of diminishing federal support, it is possible that in the not-too-distant future (the early 1990s) the direct federal contribution to infrastructure, exclusive of the appropriations from several trust funds, could be reduced by as much as 80 percent from present levels of funding. A detailed, program-by-program assessment follows.

FEDERAL PROGRAMS

Highways

Highways represent the largest area of federal infrastructure investment, accounting for more than 45 percent of the federal infrastructure budget, or as much as the combined federal outlays for wastewater treatment, mass transit, and aviation. The most visible evidence of federal involvement in the nation's infrastructure is the Interstate Highway System. This system of superhighways connecting centers of population throughout the United States constitutes probably the nation's most ambitious unified public works undertaking. Advanced originally in the Federal-Aid Highway Act of 1944 as a strategic component of national defense, it has become the principal corridor for the movement of goods, services, and people throughout the United States. Today it carries about one-fifth of all vehicular traffic.

Federal involvement in nationwide highway development predates the Interstate System by nearly half a century. The Federal-Aid Roads Act of 1916 set up the pattern of federal/state relations, providing federal matching grant assistance to the states for new road construction while the states assumed the management and maintenance responsibilities. This division of responsibility prevailed until the early 1970s, when it became apparent that states could not keep up with the increasing job of repairing and maintaining the thousands of miles of new federally aided highways without financial help.

Although the system was authorized in 1944, major progress on construction began only after the passage of the Federal-Aid Highway Act of 1956. This Act, which President Eisenhower described as launching "the greatest peacetime public works program in the history of the world," substantially increased the authorization for the Interstate System and changed the federal matching share from 60 to 90 percent for construction of Interstate roads. More significantly, the 1956 legislation established the Highway Trust Fund to receive earmarked revenues from a tax on motor fuels.

It was the availability of these designated revenues, amounting to several billion dollars a year for new road construction, that provided the impetus for the states to develop systematic plans for highway expansion and improvement. Today, in addition to 90 percent matching grants for Interstate road construction, the federal government provides 75 percent matching grants for development and repair of primary, secondary and urban roads and bridges. Together, they make up the network of Federal-Aid Highways that compose about 20 percent of the nation's roads but carry nearly 80 percent of the traffic.[2]

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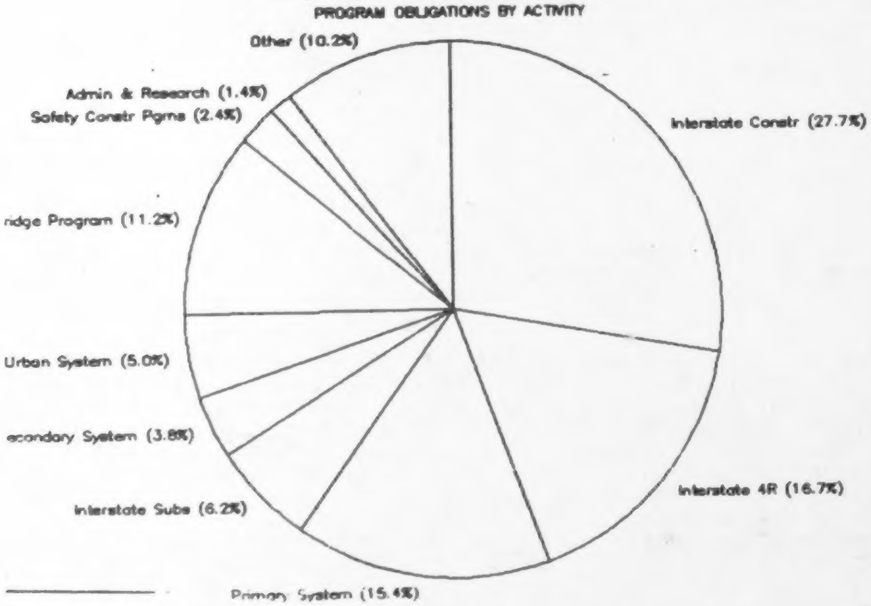
[2] Congressional Budget Office, The Federal Budget for Public Works Infrastructure, July 1985, p. 13.

Federal funds were made available first for bridge rehabilitation and replacement, then, in 1970, for major urban road repair. In 1974, assistance for reconstruction and resurfacing of non-interstate systems was authorized, and in 1976 aid was offered for restoration, resurfacing, and rehabilitation for Interstates. Finally, in 1982, Congress added Interstate reconstruction to the allowable purposes, completing the quartet of "4 Rs,"--reconstruction, restoration, resurfacing, and rehabilitation--that now qualify for federal assistance from the Trust Fund. Today almost 60 percent of federal funds go for reconstruction and major repairs and safety-related improvements.[3]

The Highway Trust Fund

The key to establishing and maintaining the federal commitment to highway funding is the Highway Trust Fund. A 9-cent per gallon tax on motor fuels and taxes on trucks are collected by the U.S. Treasury and distributed to the states under a formula based on area, population, and road mileage. Receipts into the Highway Trust Fund in 1985 were $12.9 billion. Obligations from the Fund were $14.1 billion broken into the following categories:

Figure No. 4
Highway Trust Fund (1985)



Source: *Budget of the United States Government*, 1987.

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[3] *Ibid.*, p. 15.

The connection between user fees and federal highway expenditures has been an established element of the program since the 1930s. The Hayden-Cartwright Act of 1934 declared that "it is unfair and unjust to tax motor vehicle transportation unless the proceeds of such taxation are applied to the construction, improvement, and maintenance of highways".[4] This provision is still codified in Sec. 126 of Title 23 of the U. S. Code. It was reenforced by the 1956 Federal-Aid Highway Act which created the Highway Trust Fund and earmarked the gas taxes for highway use.

With one exception, this principle of exclusive dedication of user collected revenues to highways still prevails. The exception is the provision adopted in 1982 which established a Mass Transit Account in the Highway Trust Fund from the revenues of one-cent-per-gallon of the tax on motor fuel.

The 99th Congress adjourned in October 1986 without reauthorizing federal highway and transit programs. As a consequence, no new allocations could be made to the states from the Trust Fund. Consequently, reauthorization of the highway and transit legislation was a top priority of the 100th Congress which reauthorized the bill by an override of a Presidential veto.

In the next few years Congress is expected to launch what promises to be an intensive debate on the future federal role in highway finance in the 1990s. The previously mentioned "turnback" concept of eliminating or reducing the federal excise tax and permitting the states to increase their own taxes will be prominent in the debate. Proponents praise this concept on the basis of an equitable return of state-generated revenue while those in opposition decry the potential loss of a national program focus and the ability to redistribute revenue. How to divide up the money between project purposes will also be a focus. Other debates will center on possible diversions of the gas tax to other transportation purposes, other infrastructure needs, or to other national priorities including deficit reduction.

Major past changes in the focus and direction of highway trust fund revenues, such as use of funds for highway repair, inclusion of public transit as a category, and transferring unwanted interstate segments for other highway or transit projects have traditionally been the result of an education and consensus process that builds over several years between highway authorizations. It is clear that this effort has begun and could lead to a refocusing of the program in the next decade.

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[4] 48 Stat. 995.

Wastewater Treatment

Restoring and maintaining the quality of our nation's waters was not considered a federal responsibility until well into the 1960s, when it became apparent that states and localities were not taking adequate steps to control the discharge of pollutants into their waters. Even with the emergence of a federal control program in the 1960s, the states maintained primacy over the regulation and enforcement aspects, while the federal role was limited to approving state water quality standards and presiding over a small grant program for construction of municipal wastewater treatment systems.

By the early 1970s, it was becoming clear that most states were not taking assertive actions to force polluting industries and communities to clean up their discharges. The interstate nature of many water bodies suggested the need for strong federal intervention. The national environmental movement, on the crest of a wave of new public indignation, held the "clean water" program up to ridicule in light of deteriorating quality of much of the nation's waters.

In 1972, the Federal Water Pollution Control Act[5] dramatically changed the governmental approach to pollution control. The Act set up a new and rigorous regulatory program requiring a universal permit system for every discharge into the nation's surface waters. And it set up a major new federal program to help municipalities build wastewater treatment systems.

The construction grants program created in the 1972 Act provided 75 percent matching grants to communities for construction of sewage treatment systems. The grant money was allocated to the states through a formula based on population and estimated treatment needs. The states established priority lists and approved funding of the individual treatment works. Some states complemented the federal grant with state grant money.

This basic process has not been modified substantially since 1972, although the federal share of the grant was reduced in 1981 from 75 percent to 55 percent.[6] Certain restrictions were added on project scope, design capacity, and eligibility.

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[5] Public Law 92-500.

In 1972, Congress authorized $18 billion for construction grants over three years, the equivalent of $43 billion in today's dollars.[7] This was a huge increase in federal funding, which had been well below $1 billion in most of the ten years prior to the passage of the 1972 Act. At the time of enactment it was thought the $18 billion would be sufficient to eliminate the nation's backlog of treatment needs.

But the level of financing for the program has been the subject of major political controversy from the start. President Nixon impounded $9 billion in water pollution construction grant money, setting off a major constitutional confrontation that led to the 1975 Supreme Court ruling that the President's impoundment was illegal.

In the aftermath, Congress passed the Congressional Budget Impoundment Control Act in 1974, establishing a new budget process and a mechanism for policing presidential impoundments and spending deferrals.

Despite the years of struggle, nearly $48 billion in federal Clean Water Act funds has been provided to localities. But the target of cleaning up the backlog of unmet municipal treatment needs in the United States has remained elusive. Today, EPA estimates in its biennial Needs Survey that the backlog of current unmet needs for municipal treatment facilities is around $85 billion. Projected to the year 2000, these needs are estimated to be nearly $109 billion.[8]

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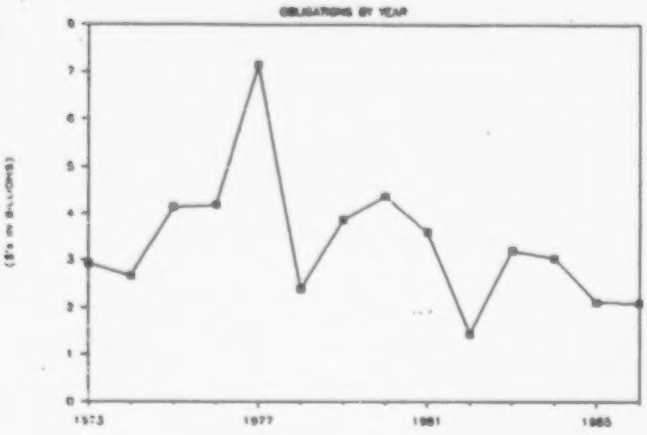
[6] The grant share did not become effective for new projects until the beginning of FY 1985.

[7] Based on the implicit price deflator for gross national product, Economic Report of the Congress, February 1986.

[8] 1984 Needs Survey, Report to Congress, U.S. EPA, Feb. 10, 1985. (Not all of these estimated needs are eligible for federal grant assistance, although all of them represent legitimate components of a public wastewater treatment system that must be funded by some source.)

Figure No. 5
EPA Construction Grants Program
1973-1986



Source: Environmental
Protection
Agency

In addition, there is impending application of federal requirements for control and correction of stormwater discharges that could cost anywhere from $500 billion to well over $1 trillion, depending on the frequency of storm events and the methods of collection and treatment employed. EPA no longer calculates the cost of controlling separate storm sewer run-off, but the 1974 Needs Survey, the last containing such estimates, put storm water correction costs at $305 billion. Adjusted to 1985 dollars, the cost would reach $657.5 billion.

Why has this goal been so elusive? There are several explanations. First, the Congress in 1972 grossly underestimated what it would really cost to achieve uniform standards of municipal treatment. Second, the nation continues to grow and develop, creating new needs and requirements for treatment capacity. Third, the inflation the nation in general, and the construction industry in particular, experienced during the 1970s drove up treatment plant costs.

The EPA Needs Survey has been criticized as an unrealistic "wish list" which does not accurately reflect the actual level of treatment need in the nation. Recent efforts by EPA to tighten the criteria and verify the states' needs estimates may have taken a good deal of the inflation out of the estimates and improved the survey results. However measured, there is an undeniably high level of unmet need in the nation for wastewater treatment works that must be built in the next several years to protect the public health and aquatic environment.

A reauthorized Clean Water Act unanimously passed both the House and Senate at the close of the 99th Congress. President Reagan vetoed the reauthorizing legislation with the explanation that he found it too costly and not expeditious enough in completing "a transition from federal to state and local responsibility."[9] Early in 1987, the legislation was again introduced, passed by the Congress, vetoed by the President, and passed in a veto override.

The legislation initiated a transition in the governmental role that will take the federal government entirely out of wastewater treatment funding by 1995. The grant program will be phased out in two increments between 1986 and 1991. The bill authorized $2.4 billion in grants for each of the fiscal years 1986, 1987, and 1988 and $1.2 billion for each of the fiscal years 1989 and 1990. Beyond fiscal year 1990, the federal construction grants program will cease to exist, although Congress could, of course, extend or even expand it if it considered such measures advisable by the end of the decade. In place of the grants program, the legislation provides for creation of self-sustaining revolving loan funds established and administered by the states.

The funds will be available to (1) provide low or no interest 20-year loans to communities for treatment works construction; (2) assist communities by buying or refinancing existing debt obligations at more favorable rates; (3) provide credit enhancement through the provision of loan guarantees and the purchase of debt insurance for localities; and (4) pay for the principal and interest cost of state-issued bonds, the proceeds of which are deposited into the state revolving loan fund.

To provide initial capital for the revolving loan funds, the bill authorizes total federal appropriations of $8.4 billion spread over a schedule of six years beginning in fiscal year 1989 and continuing through fiscal year 1994.[10]

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[9] Washington Post, Nov. 7, 1986, A3.

[10] Conference Report, 99-1004, U.S. House of Representatives, October 15, 1986.

While the President twice vetoed this legislation, it should be noted that the Reagan Administration never openly opposed the revolving loan fund concept as a transitory mechanism, and EPA has supported the concept. Instead, the veto was explained in terms of opposition to the total authorized levels and to the extension of the grant program beyond the 1989 termination date that the Administration had wanted.[11]

Water Supply

The federal role in water supply for municipal and industrial use is limited and diffuse. Federal assistance to communities for water supply is primarily a function of development grants or assistance to small communities. The Farmers Home Administration (FHA) provides low interest loans and grants to small communities (localities with populations under 10,000) to install, repair, improve and expand public water supply systems. Community Development Block Grants (CDBG), administered by HUD, are grants to larger communities for purposes which can include water supply facilities. Additionally, water supply grants are available from the Economic Development Administration (EDA) and the Appalachian Regional Commission for communities in economically qualifying areas.

Since there is no set amount allocated to water supply within these individual programs, spending varies from year to year. FHA loans for water supply in 1984 were $162 million, with another $67 million available for water supply grants. As a portion of the CDBG program, according to Congressional Budget Office estimates, water supply has averaged 3 percent of the total appropriation over the past few years. In 1984, CDBG funding totaled $180 million. CBO also estimates that about 20 percent of the EDA grant funds over the history of the program have gone to water supply purposes, or between $35 and $45 million each year. The Appalachian Regional Commission grants approximately another $10 million for water supply.

In 1958, both the Corps of Engineers and the Bureau of Reclamation were authorized to include municipal and industrial water supply in their water resource development projects. According to the Congressional Budget Office, the combined outlays of the two agencies for water supply capacity have increased gradually since the 1960s and were estimated to have reached nearly $170 million in 1984.

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[11] A subsequent alternative to the Congressionally passed bill was offered by the Administration in January 1987 (S. 76). It contained authorization for the revolving loan fund, but at a substantially reduced level, and limited loans to 55% of the eligible project costs.

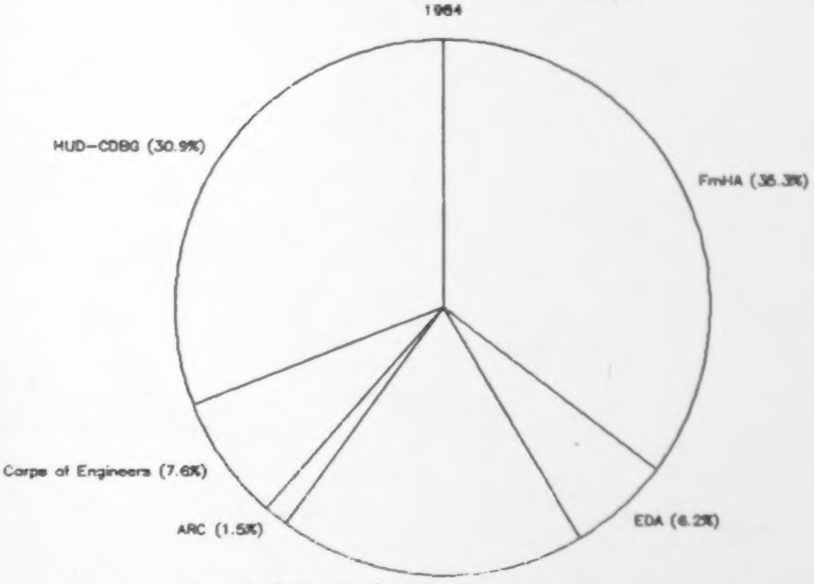
Unlike some of the other federal water resource development purposes, municipal and industrial water supply is reimbursable, paid from water user fees. Even so, the payback has been heavily subsidized by the low discount rates used in estimating federal water development projects and the allocation of project costs to other non-reimbursable purposes such as recreation and fish and wildlife.

As described elsewhere in this chapter, provisions in the recently enacted omnibus water projects bill (P.L. 99-662) increase the reimbursable project costs and require up-front project cost sharing agreements by the beneficiaries for the purposes of both planning and construction.

With respect to municipal and industrial water supply, the non-federal interests will now be required to agree to pay 100 percent of the separable costs for projects begun after April 30, 1986, and 50 percent of the cost of project planning and engineering.

Overall these loan and assistance programs for water supply make up a small and diminishing component of federal infrastructure financing. In 1984 these programs together comprised only 2.4 percent of the total federal outlay for infrastructure, or about $650 million. CBO estimates a decline of more than 25 percent by FY 1988 if EDA, the ARC, and the Farmers Home Administration are phased out as the Administration has proposed.

Figure No. 6
Federal Outlays for Water Supply



Source: Congressional Budget Office

Water Resources

Federal involvement in the nation's water resource development preceded federal initiatives in any of the other areas of infrastructure improvement. In the 19th Century, the Army Corps of Engineers worked at improving inland navigation channels and later initiated what would become a major role in flood control and multiple purpose water resources development.

Early in this century, the creation of the Bureau of Reclamation led to the development of more than 700 dams throughout the western United States for irrigation, flood control, and water conservation purposes.

The 1930s were a time of intensive investment in water resource development to control flooding, develop hydroelectric energy, assure navigation during low-flow seasons and generally stimulate the economy through counter-cyclical investment. Out of this period emerged the Tennessee Valley Authority, the Bonneville Power Administration, and the other regional federal power marketing agencies, as well as the Soil Conservation Service with its countless small watershed improvement and conservation projects.

Beginning in the 1960s, the dual purposes of recreation and fish and wildlife enhancement were added as legitimate purposes for project development, and the availability of imputed recreational benefits in the project benefit/cost calculation helped push numerous multipurpose projects toward a favorable economic cost/benefit ratio.

Total federal spending on water resources has climbed steadily in nominal terms to a peak in 1983 of $3.8 billion. Since then, spending has fallen slightly to the 1985 level of $3.6 billion. According to the Congressional Budget Office, however, federal capital expenditures for water resources declined (in 1984 dollars) from $3.4 billion in 1977 to $2.0 billion in 1984. Further, the Corps of Engineers' combined capital outlays for flood control, multipurpose dams, and navigation fell from about $2.4 billion to $1.4 billion between 1977 and 1984 and have continued to decline slightly over the last two fiscal years.[12]

Expenditures were divided among the several agencies with the Corps of Engineers playing by far the largest role.

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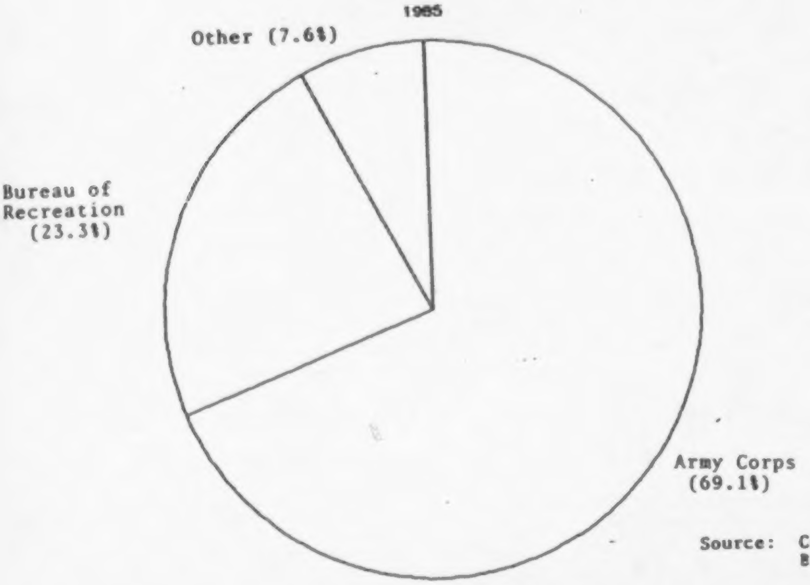
[12] Congressional Budget Office, The Federal Budget for Public Works Infrastructure, July 1985, pp. 68-9.

Figure No. 7
Federal Water Resources Expenditures by Program



Source: Congressional Budget Office

Perhaps a more useful breakdown of the aggregate expenditure is by purpose. Of the 1984 budget of approximately $3.8 billion for water resources, the CBO estimated that 18 percent of federal spending supported deep-draft navigation projects, 22 percent was used for inland waterway projects, with the balance spent for other types of projects such as flood control, irrigation, navigation, hydroelectric power generation, municipal and industrial water supply, and recreation. A little more than half of all funding went to capital improvements including major rehabilitation, and the remainder went to operations, maintenance, investigation, research, and administration.[13]

The federal share of the cost of a project has varied by the purpose and type of the project ranging from nearly 100 percent for navigation improvements for inland waterways and harbor dredging to 46 percent for a Soil Conservation Service irrigation project. Cost sharing, when it involves a state or locality, has generally been in the form of contributions of land, easements or rights-of-way.

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[13] _Ibid_., p. 70-71.

With the passage of the omnibus water project law, signed by the President, on November 17, 1986, a new era in user fee and cost sharing arrangements for the beneficiary of federal water projects was launched.

The omnibus water project bill is the first general water resource authorizing legislation to pass the Congress in ten years. The bill authorizes the U.S. Army Corps of Engineers to undertake more than 260 new projects to build or improve locks and dams, ports and channels, flood control, water supply, hydroelectric projects, recreation, and wildlife enhancement in communities throughout the U.S.

This major authorization is not likely to precipitate a major increase in federal spending for water resources development for two reasons. First, these are only authorizations. Most of the newly authorized projects must still go through the budget and appropriations process and will have to compete with a range of other spending priorities in a tightly constrained budget. Second, and probably more significantly, the authorization legislation places major new upfront requirements on the beneficiaries of the project to share in the costs of the project, as well as contribute to its maintenance and upkeep.

The new cost sharing provisions require non-federal interests--municipalities, port and power authorities, water and flood control districts--to enter into a binding agreement prior to construction with the federal government to share in the operation, maintenance, replacement, and rehabilitation costs, as well as the construction costs. Depending on the project purposes, the non-federal share of construction costs can range from a minimum of 25 percent for some flood control projects up to 100 percent of the separable costs of a project for hydroelectric power and municipal and industrial water supply.

The legislation also requires the non-federal interest to provide all land, easements, rights-of-way, and dredge spoil disposal areas, and do all necessary road and real property relocations. Additionally, the non-federal interest must now pay 50 percent of the costs of project planning and engineering. The planning, design, and construction cost for a large project can be substantial, and localities and other user groups will carefully weigh the need for the project and available alternatives to provide the water resource function before entering into binding contracts for cost sharing and repayment.

In addition to cost sharing for new projects, legislation will increase available federal revenues for the construction of inland waterway, locks and dams, as well as operation and maintenance of U.S. harbors and the St. Lawrence Seaway. The imposition of a new harbor maintenance tax on the cargo loaded and unloaded in U.S. ports, together with an increase in the existing tax on barge fuels used for commercial transportation on inland waterways, will provide new sources of user-based revenues. These revenues will be deposited into a new Harbor Maintenance Trust Fund and the existing Inland Waterways Trust Fund.

Revenues into the Harbor Maintenance Trust Fund are expected to be $84 million in fiscal year 1987, increasing to $254 million by 1992. These new revenues will cover up to 40 percent of the costs of operating and maintaining U.S. harbors and 100 percent of the operating and maintenance costs of the St. Lawrence Seaway Development Corp. Revenues going into the Inland Waterways Trust Fund will increase as the barge fuel tax incrementally doubles from 10 cents per gallon to 20 cents in 1994.

Aviation

Federal spending for public aviation facilities was $4.2 billion in FY 1985, or 15 percent of the total federal outlay for infrastructure. Only about 28 percent of this, however, was specifically for capital improvements related to airports and facilities. The remaining 72 percent was for Federal Aviation Administration operations and research and development. The operations include the total cost of air traffic control and support facilities, including wages for traffic controllers.

In recent years the federal contribution to airport capital development has accounted for approximately 35 percent of the total investment.[14] The rest of the capital improvement funds have traditionally been raised through the issuance of tax-exempt municipal bonds. The federal share varies significantly with the type and size of the facility. In the large and medium size commercial airports, federal grants account for approximately 25 percent of capital spending. On the other hand, at smaller commercial and general aviation airports, federal grants can exceed 90 percent of the capital invested.[15]

With the exception of the federally operated air terminal facilities at Washington's National and Dulles Airports, which receive direct appropriations,[16] all federal outlays for capital aviation development come from a special fund financed by user fees. The Airport and Airway (A&A) Trust Fund is the recipient of an 8-percent excise tax on domestic passenger tickets and a

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[14] Congressional Budget Office, Financing U.S. Airports in the 1980s, April 1984.

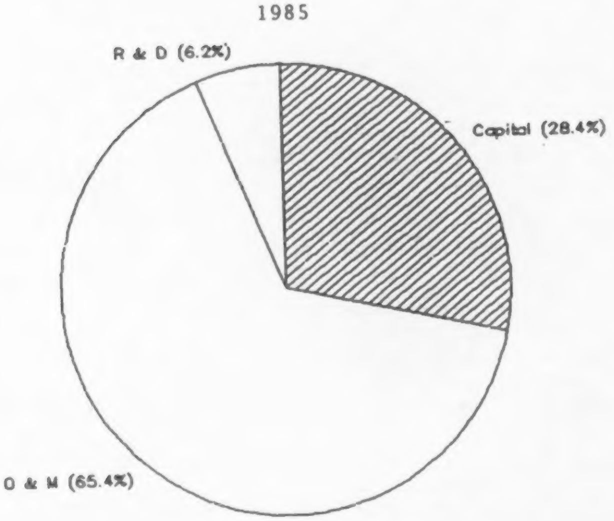
[15] *Ibid*.

[16] The Congress recently adopted a law, supported by the Administration, to lease these two federal facilities to regional authorities. One of the objectives of this lease arrangement was to facilitate a major capital improvement plan which would be debt financed by bonds issued by the new authority.

14-cent per gallon tax on jet fuel, a 12-cent per gallon tax on airplane gasoline and taxes on air freight and international passenger departures. These taxes generated $3.6 billion for the Trust Fund in 1985--nearly $1 billion more than was spent from the Fund in that year.

The surplus in the A&A Trust Fund is now approximately $3.2 billion and will grow in FY 1987, since the Continuing Resolution (P.L. 99-500) limited the fund's expenditures. While the Airport and Airways Trust Fund, like other trust funds, cannot be used for other budgetary needs, the surplus does make the annual deficit appear smaller.

Figure No. 8
Federal Outlays for Aviation



Source: Congressional Budget Office.

Mass Transit

Federal assistance for urban mass transportation facilities is a relatively recent phenomenon, beginning in the mid-1960s. The federal contribution has climbed from $11 million in 1965 to $3.6 billion in 1985. Federal operating subsidies began in 1975. In 1982, passage of the Surface Transportation Assistance Act provided an assured source of revenue for mass transit, dedicating 1 cent of the 9-cent-per-gallon federal tax on motor fuels for mass transit. This dedicated revenue provides mass transit with about $1.5 to $1.7 billion a year.

With 75 percent matching grants,[17] the federal government provides about three quarters of the total capital spending for mass transit. State and local governments provide the remainder, mainly as a formula match for federal grants. Capital grants are available to urban areas to support bus purchases and rehabilitation, maintenance facilities, modernization of existing rail transit systems, and construction work on new or existing rail systems.

Since 1973, cities have had the option of substituting transit projects for urban sections of the Interstate system that cities, with their state's approval, decide are unnecessary or inadvisable. This Interstate substitution money--which has worked out to be $500 to $600 million per year--is paid out of the general treasury, rather than from the Highway Trust Fund.

The federal government also funds a major portion of the Washington METRO subway system through direct grants and loan guarantees. To date, $2.4 billion of a total $2.9 billion authorized for METRO system development has been appropriated.

The Administration has also proposed a steep cut in federal support for urban mass transit over the next few years. In FY 1986 and again in the 1987 budget, the Administration has proposed the consolidation of the UMTA grants program into a single capital formula grant, funded by the Mass Transit Account of the Highway Trust Fund. Under this proposal, as illustrated in Figure 9, the federal government would discontinue all operating support to urban transportation systems, do away with discretionary capital grants, and require that interstate substitutions, as described above, come out of the Mass Transit Account of the Highway Trust Fund.

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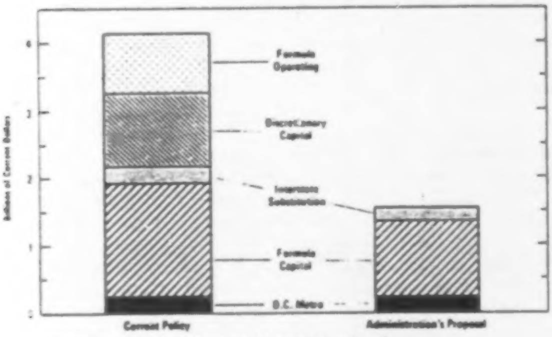
[17] The federal grant share is 75 percent for discretionary grants, 80 percent for formula capital grants and 85 percent for interstate substitution grants.

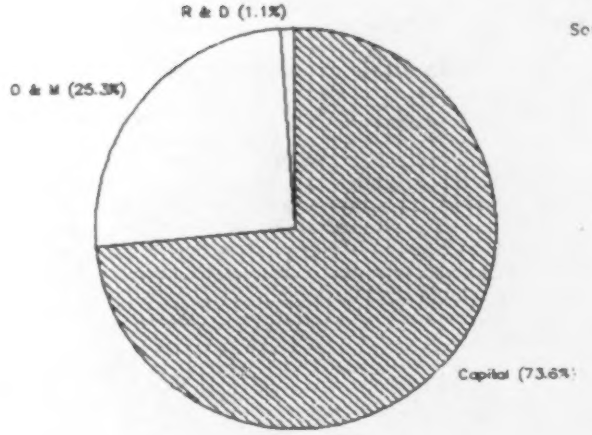
Figure 9
Federal Transit Grants for FY 1986



SOURCE: Congressional Budget Office and Budget of the United States Government.

Figure No. 10
Federal Outlays for Mass Transit

1985



Source: Congressional Budget Office

Thus, except for the money available from the 1-cent-per-gallon dedicated gas tax, all other federal support for Urban Mass Transit would stop. Implementation of such policy would reduce the level of federal support for mass transit by more than 60 percent.

So far, however, the Congress has not acceded to the Administration proposed reductions. The Congress appropriated $3.2 billion for mass transit in FY 1986, and although this was less than the authorized level of $4.6 billion, it was substantially above the Administration's request.

General Revenue Sharing

A discussion of the federal contribution to infrastructure funding would be incomplete if it did not acknowledge the contribution of General Revenue Sharing to local public works financing and operations. While it is difficult to quantify the precise contribution that the $4 billion a year in federal revenues provided, it is a fair speculation that its discontinuation will affect local infrastructure budgets.

A 1983 survey of General Revenue Sharing by the U.S. Bureau of the Census indicated that, next to police services, roads ranked second on the list of programmatic areas for which the revenue was used. To make up for the loss of revenue sharing, local governments will need to either cut services, reduce capital outlays, or raise revenues.

One estimate indicated that, to make up for the loss of General Revenue Sharing funds, local governments would need to increase their property tax by an average of 9.2 percent or make substantial reductions in personnel for such essential local services as police, fire, schools, human services and street maintenance.[18] Since raising property taxes in most localities has become politically and even legally prohibitive, it is more likely that public services will be reduced.

Federal Capital Accounting

Any comprehensive attempt to deal with the nation's infrastructure needs must begin with an effort to make certain we obtain as clear an understanding as possible of what the nation is doing to finance public facilities.

Within the federal government, little such understanding exists. While the federal government spends billions of dollars annually on public works, it has no satisfactory inventory of its public facilities, and no real oversight over the monies spent on such facilities, once a spending decision is made.

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[18] National Association of Counties estimate based on ##?U.S. Bureau of Census GRS Survey data, 1983.

Capital spending by the federal government is difficult to understand and manage since Federal budget data usually lump capital and operating expenses together. It is often impossible to determine, for example, how much has been invested in construction, and how much in maintenance. In short, where public works are concerned, the Federal government often struggles in the dark.

For several years, the Office of Management and Budget has published a Supplement to Special Analysis D as part of the Budget, as required by Title II of Public law 98-501. While this information is useful, it has never been integrated properly into the process of investment decisions by either the Executive Branch or the Congress.

Increased coordination and coherence in investment accounting strategies will be assisted by development of a comprehensive capital accounting system within the federal budget which would identify: current and projected capital needs and expenditures, current and projected operating and maintenance expenditures, and sources of funding. Clearly stated goals and objectives for federal public works investments are essential to provide a common direction to policymaking and program investment.

Many cities, especially larger ones, as well as some states, utilize capital planning and budgeting processes, which attempt to define long-term capital needs, integrate them with budgeting priorities, and assess the ongoing impact of operating these investments on various sources of revenue. Any movement toward a federal capital budget for infrastructure must not be viewed as a way to bypass the existing unified budget. The aim would not be to paper over the federal budget deficit, but rather to establish a coherent framework for federal legislative and administrative decision-making on the financing of infrastructure.

Little progress can be expected toward meeting those needs without greater emphasis on capital accounting at the federal level.

Indirect Funding

In addition to direct federal financial assistance for infrastructure programs, the federal government indirectly stimulates investment in infrastructure through various tax provisions. For example, the capital cost recovery provisions that were in effect before the enactment of the Tax Reform Act of 1986 played an important role in encouraging private firms to participate in the funding of solid waste and sewage treatment facilities through public-private partnerships. As discussed more fully in Chapter IV, accelerated depreciation and the investment tax credit helped to provide the rate of return necessary to make such participation feasible. Rules governing equipment leasing have also played an important role in encouraging public investment and private financing. More indirectly, the deduction from federal tax for state and local taxes has made it somewhat easier for these jurisdictions to raise revenue for infrastructure funding from their citizens.

The largest source of indirect funding, however, is the exemption from federal income tax of interest paid to holders of state and local debt. In the past, federal tax law has provided substantial incentives for private sector investment in public infrastructure through the tax-exempt bond provisions. Exempting the interest of publicly issued bonds from federal taxation (and, in most cases, in-state taxes as well) provided a tax-free premium for the investor. Tax exempt bonds historically carry an interest rate on average three percentage points lower than taxable bonds.

The use of tax-free municipal bonds has grown in the past few years, helping to finance the construction of major portions of the nation's infrastructure. While these bonds do not directly draw on the U. S. Treasury, their tax-preferred status is a form of federal subsidy, since it reduces the amount of tax revenue that might otherwise flow to the Treasury.

Annual federal tax losses due to interest on state and local government debt is estimated at close to $19 billion in FY 1986. As explained in Chapter III, this was up from an FY 1985 revenue loss of approximately $16.5 billion. The Treasury estimates that approximately 45 percent of this is associated with public purpose debt, and the remaining 55 percent is from private purpose issues such as industrial development bonds, non-profit schools and hospitals, owner-occupied housing and student loans.[19]

As a percentage of total volume of tax-exempt issues, infrastructure investment has been fairly constant, ranging between 8 percent and 13 percent over the past several years. As the table below illustrates, the largest area of tax exempt debt issues is for environmentally related facilities. A major proportion of the increase shown in 1985 is due to advance refunding to take advantage of lower interest rates.

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[19] Budget of the U.S. Government, Fiscal Year 1987, Special Analysis, Table G-2.

TABLE #1
VOLUME OF TAX-EXEMPT DEBT ISSUED FOR PUBLIC WORKS BY PROJECT TYPE

YEAR	ROADS & BRIDGES	AIR-PORTS & PORTS	TRANS, OTHER	WATER & SEWER	RESOURCE REC & SWD	TOTAL	AS A % OF ALL ISSUES
1977	1,564	920	485	3,324	N/A	6,294	8.8
1978	1,335	1,497	629	3,264	N/A	6,725	9.6
1979	1,128	857	435	3,160	N/A	5,581	8.6
1980	1,103	907	655	2,960	N/A	5,624	7.4
1981	995	1,666	776	2,931	N/A	6,368	7.5
1982	1,657	2,641	1,958	5,127	145	11,528	9.3
1983	1,313	1,960	1,078	4,943	725	10,019	8.2
1984	1,948	3,703	1,948	5,671	4,239	17,509	13.6
1985	4,723	4,952	2,403	9,345	3,106	24,529	10.1

Source: Public Securities Association
Note: N/A = Not Available

Changes in the tax codes will limit the access of state and local governments to the tax-exempt market, but will not provide the Treasury with any significant recaptured revenues for a number of years. Estimated revenue increases from changes in the tax-exempt bond provisions would amount to only $16 million in FY 1987, and a cumulative revenue increase of only $622 million from FY 1987 to FY 1991.[20] (See Chapter III for a detailed explanation.)

Many consider this form of indirect federal financing to be a highly efficient means of encouraging state and local investment. For one thing, it encourages and facilitates the development of business and commerce, creates jobs and increases the overall tax base for all levels of government, while at the same time providing needed public facilities and services. Moreover, the use of a federal tax incentive to stimulate development avoids the overhead associated with direct federal management or federal pass-through grants and assistance.

Even while the Congress has been reducing direct and indirect levels of federal assistance for public works, there has been consideration of proposals providing a different type of support to states and localities, mainly in the form of low interest loans to assist localities in need of infrastructure investment. Most of these proposals, advanced over the last several years, have involved the creation of some form of federally funded infrastructure bank.

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[20] Conference Report, U.S. House of Representatives, Report 99-841, Volume II of Volume 2, Sept. 18, 1986.

A Federal Infrastructure Bank

In the 98th Congress, a number of bills were introduced aimed at assisting states and localities in financing capital investment in infrastructure through loans, credit enhancement, and technical assistance.

In the Senate, Senators Domenici and Bradley sponsored the Public Investment Incentive Act which authorized appropriations of $10 billion over three years to capitalize state infrastructure banks. Senators Stafford and Randolph followed with the Public Investment/Jobs Act providing authorization of $50 billion over ten years. Senator Bentsen introduced legislation to fund state banks with $100 billion over ten years.

None of the new funding initiatives advanced, in either the House or Senate during the 98th Congress, however. Instead, Congress decided to make a comprehensive assessment of the problem and passed legislation creating the National Council on Public Works Improvement, which called for the analysis and refinement of national infrastructure needs and the expansion of federal budgetary information on capital expenditures as a part of the President's annual budget submission.

Prior to completion of the 98th Congress, Representative James Howard introduced legislation for the creation of a National Infrastructure Fund, which he reintroduced in the 99th Congress as H. R. 1776. Drawing on work conducted by the Joint Economic Committee and its National Infrastructure Advisory Panel, and building on the revolving loan concept developed in his home state of New Jersey, Rep. Howard's proposal would create a fund to be capitalized by $30 billion in appropriations over ten years. These funds, which would be off-budget, would be allocated as repayable loans to the states for the creation of their own revolving loan funds.

During 1985 and 1986 the House Public Works Committee held a series of hearings on H.R. 1776, but the Committee did not report out the legislation, and it died with the end of the 99th Congress.

In the House there was also legislative activity in this area during the 98th Congress. Bills were introduced, several of which would have created new institutions modeled after the Reconstruction Finance Corporation to finance private and public capital needs directly, with control of all spending decisions and priorities at the federal level.

Conclusion

When looked at in absolute dollar terms, federal support for infrastructure appears substantial: $28.5 billion or 23.3 percent of the discretionary, non-defense budget in 1985. On closer examination, however, it becomes clear that federal spending on infrastructure is in large part generated by the Highway Trust Fund and is spent mostly on transportation. Without the Highway Trust Fund and the expenditures it sustains, federal spending on infrastructure would be reduced by 70 percent and support in these other areas is scheduled for further decline.

Congress has agreed to phase out construction grants for wastewater treatment; strict new cost sharing rules have been implemented for water resource projects; and the Administration is anxious to end non-trust fund expenditures for mass transit. Similarly, indirect federal financial assistance through the use of tax-exempt bonding is also being tightly constrained due to recent changes in the tax law.

With federal support for state and local infrastructure undergoing major changes, there is the need for a redefinition of the appropriate federal role and a redesign of federal program involvement to correspond to and complement what is taking place at the state and local levels of government. As we will see in the next chapter, states are moving toward the creation of new infrastructure financing mechanisms to assist local governments in meeting their needs. The federal response should be one of supporting and complementing this development with new forms of financial support that build upon the local funding capacity, revamped regulation and requirement to encourage innovative and cost-effective solutions, and new, indirect financial support through the creation of a new category of tax-exempt public-purpose bonds.

II. THE STATE AND LOCAL ROLE

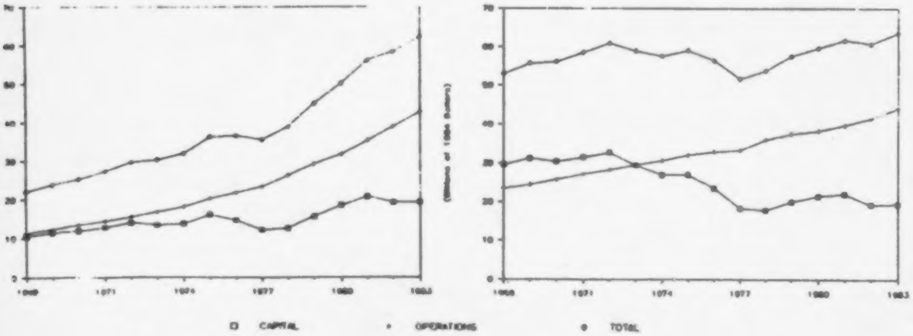
State and local governments have the primary responsibility for building, operating, and maintaining the nation's infrastructure. The Congressional Budget Office estimates that during 1983, state and local government spent nearly $64 billion for infrastructure, or roughly 70 percent of all public works expenditures. Of that, more than two-thirds, or $43 billion, was for operation and maintenance.

Total state and local expenditure for infrastructure has increased substantially in nominal terms since the late 1960s, as shown in Figure 1. However, when expenditures are expressed in constant 1984 dollars, as shown in Figure 2, capital spending has actually declined in real terms, while expenditures for operations and maintenance have increased.

State and Local Spending for Public Works

Figure 1
(In Nominal Dollars)

Figure 2
(In Constant Dollars)



Source: Chambers Associates Incorporated from Congressional Budget Office data (unpublished).

In terms of programmatic areas, state and local expenditure, like its federal counterpart, is dominated by spending for roads and highways (see Table 1). Unlike federal investment, however, state and local levels of government make substantial expenditures on the construction and operation of water supply facilities.

Table 1
Outlays for Infrastructure, 1983
(In Billions of 1984 Dollars)

	State and Local			Federal
Mode	Capital	Operating	Total	Total
Highways	9.9	18.7	28.6	9.5
Water Supply	4.0	9.1	13.1	1.0
Mass Transit	0.9	8.1	8.9	3.9
Wastewater Treatment	2.8	5.6	8.5	3.6
Aviation	1.0	1.7	2.6	3.5
Water Resources	0.9	1.0	1.9	3.9
TOTAL	19.5	44.2	63.6	25.5

Source: Congressional Budget Office from Bureau of Census data.
Note: Totals may not add due to rounding.

Who Pays for What?

The states' major contribution to infrastructure funding is in the area of highways, roads and bridges. Most of this state contribution is derived from state-imposed excise taxes on motor fuels which, like the federal highway gas tax, are dedicated mainly to road construction, improvement and upkeep.

A number of states provide small matching grants and assistance to localities for wastewater treatment, but many do not. Eleven states contribute to port and waterway improvements, 37 have programs for airport assistance, and 14 provide some help with water supply systems. But, together, the annual state contribution in these three areas is only about a quarter of a billion dollars.

The responsibility for infrastructure facilities, their construction, financing, operation, maintenance, and eventual rehabilitation and replacement, falls mainly on one level of government--the cities, towns, counties and special districts that carry out the functions of government at the local level.

Among localities, and between categories of local government, the types and levels of responsibility for public works financing and operation vary widely depending on the size of the community, demographic and regional characteristics, and traditions of local governmental responsibility. Generally, local governments are the largest investors in what we term environmentally oriented infrastructure, with cities making the largest outlays for water supply and wastewater treatment facilities, while counties are the dominant investor in solid waste disposal facilities.

The analysis by the Panel of financing in the state of Florida, for example, showed that cities in that state were responsible for nearly 90 percent of all public spending for water supply. Spending for wastewater by cities was only slightly greater than that of counties. Counties dominated investment in solid waste disposal, with responsibility for 70 percent of all public spending in that area.[1]

Cities and counties also contributed in the area of transportation. In Texas, for example, these two governmental levels contributed $607 million in 1984, or 35 percent of total state and local spending. The role of cities in transportation was diverse and typically included everything from highways to mass transit and airports. Texas counties, however, were generally limited in the extent of their transportation financing responsibility to highways, roads and bridges.[2]

Special authorities and districts are widely used in Texas and Florida, with responsibility for a wide range of infrastructure services, including mass transit, water, wastewater, and ports and harbors. Both states reported that such authorities have most or all financing responsibility for port and harbor facilities.

Texas has an estimated 230 water control and improvement districts and over 700 municipal utility districts with a broad range of responsibilities for financing and operating water related services. Because of the proliferation of these special purpose districts, especially in the south and the western United States, they have become an important component of local financing.[3]

Special districts are set up generally to provide a single service and are empowered to issue revenue bonds backed by either fees or taxes charged to users of the service or beneficiaries of the development.[4] Governments find them useful in light of the declining success of voter referenda on bond issues and, in many states, constitutional constraints on the level of general obligation debt.

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[1] Florida report to the Private Sector Advisory Panel on Infrastructure Financing, Florida Capital Facilities Planning and Budgeting, March 1986, p. 81.

[2] Texas report to the Private Sector Advisory Panel on Infrastructure Financing, Texas Infrastructure: Elements and Issues, September 1986, p. 50.

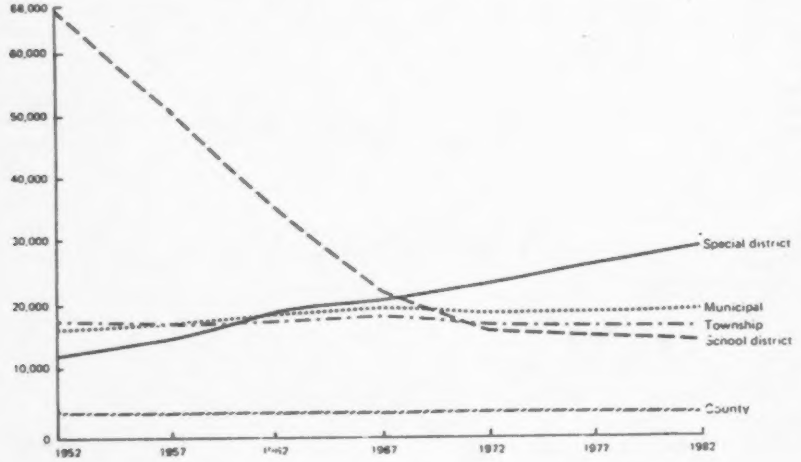
[3] Porter, Douglas R. and Richard B. Pieser, Financing Infrastructure to Support Community Growth, Development Component Series, Urban Land Institute, 1984.

Table 2

Special District Governments by Regions: 1977 and 1982

Region	Special district governments 1977	Special district governments 1982	Percent increase 1977-1982	Percent of all special district gov'ts 1982
United States	25,962	28,588	10.1	100.0
Northeast	4,369	4,533	3.8	15.9
North Central	9,050	9,653	6.7	33.8
South	5,809	6,981	20.2	24.4
West	6,734	7,421	10.2	26.0

Source: 1982 Census of Governments, Bureau of the Census, p. XI.



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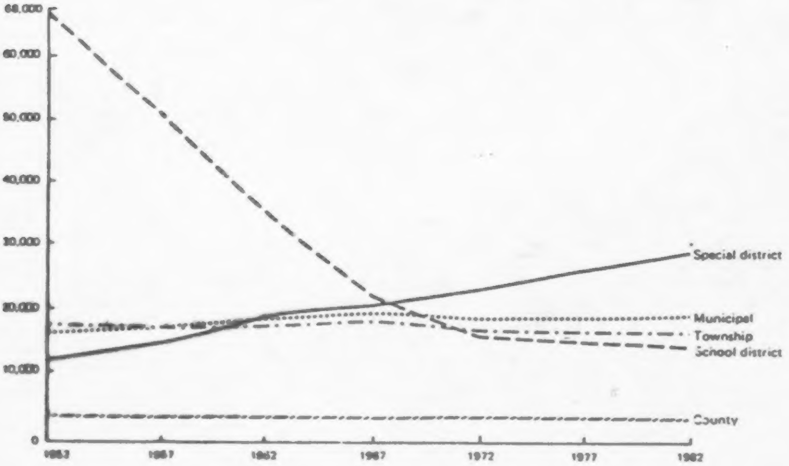
[4] According to the U.S. Department of Commerce report on government finances, of all long term special-district-issued debt outstanding for 1983, 87 percent ($647.2 million) was non-guaranteed, or revenue bond, debt.

According to the Census Bureau records, in the period 1952 to 1982, the number of special districts grew by 131 percent, taking responsibility for all types of local government functions including water supply, sewerage, highways, and airports. The number of special districts approached 29,000 in 1982, compared to 35,810 cities and towns nationwide.

Figure 3

Local Governments by Type: 1952 to 1982



Source: Bureau of the Census, Governmental Organization, p. XXV.

The relative ease of access by a special district to the bond market is enhanced by their capacity to assure the integrity of revenues for debt service, facility operation, maintenance, and eventual replacement. This is true because their revenues are sheltered from other governmental entitites which could otherwise divert them to other purposes. This becomes especially critical during times of deficit budgets, and could become even more pronounced as local governments struggle to make up for the loss of General Revenue Sharing.

In addition to traditional areas of expenditure, local government must now anticipate major new expenditures to comply with federal requirements, especially in the areas of environmental control. Cities and counties foresee major shortfalls in existing levels of funding to respond adequately to those needs.

New Jersey estimates a statewide capital need of $2.3 billion for solid waste management facilities during the next 10 years. Most of that will be required at the county level. Additionally, just closing existing landfills could exceed $500 million, with the cost of much of this a cost to local governments.

Where the Money Comes From

The following data was compiled by the Panel from three states--Florida, New Jersey, and Texas. It analyzes funding sources for public works investment at the state and local level. Results indicate that the four primary funding sources are federal grants, bonded indebtedness, user taxes, and user fees.

Table 3

FLORIDA
PERCENT DISTRIBUTION OF FUNDING SOURCES
USED BY GOVERNMENTAL UNITS FOR INFRASTRUCTURE INVESTMENT

INFRASTRUCTURE AREAS	USER TAXES	OTHER TAXES	USER FEES	FEDERAL GRANTS	BONDED INDEBTEDNESS	OTHER DEBT	PRIVATE FUNDS	MISC	TOTAL
TRANSPORTATION:									
Highways, Streets Roads & Bridg	33.7	0.0	17.9	40.9	7.5	0.0	0.0	0.0	100.0
Mass Transit	0.0	4.0	0.0	80.0	4.0	0.0	0.0	12.0	100.0
Airports	0.0	7.1	28.6	28.6	28.6	0.0	0.0	7.1	100.0
Water Ports	0.0	6.0	15.0	54.0	20.0	0.0	0.0	5.0	100.0
SUBTOTAL	24.9	1.4	16.3	45.6	9.5	0.0	0.0	2.2	100.0
WATER SUPPLY:									
SUBTOTAL	1.8	4.4	35.2	2.2	11.5	0.0	45.0	0.0	100.0
WASTEWATER:									
SUBTOTAL	0.0	3.4	0.0	18.9	26.0	7.3	44.3	0.0	100.0
SOLID WASTE:									
SUBTOTAL	0.0	0.0	0.0	0.0	89.0	0.0	11.0	0.0	100.0
SYSTEM TOTAL	12.6	1.5	9.3	26.4	35.5	1.3	12.4	1.1	100.0

Note: Based on actual expenditures for 1982.

Table 3 (Cont'd)

NEW JERSEY
PERCENT DISTRIBUTION OF FUNDING SOURCES
USED BY GOVERNMENTAL UNITS FOR INFRASTRUCTURE INVESTMENT

INFRASTRUCTURE AREAS	USER TAXES	OTHER TAXES	USER FEES	FEDERAL GRANTS	BONDED INDEBTEDNESS	OTHER DEBT	PRIVATE FUNDS	MISC	TOTAL
TRANSPORTATION:									
Highways									
Streets & Rds	19.7	11.1	0.0	48.7	20.4	0.0	0.0	0.0	100.0
Mass Transit	11.7	0.0	13.5	70.9	3.9	0.0	0.0	0.0	100.0
Airports	1.0	0.0	0.0	21.0	78.0	0.0	0.0	0.0	100.0
Water Ports	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0
SUBTOTAL	16.8	8.8	1.3	47.0	26.1	0.0	0.0	0.0	100.0
WATER SUPPLY:									
SUBTOTAL	2.8	11.0	22.5	6.4	57.3	0.0	0.0	0.0	100.0
WASTEWATER:									
SUBTOTAL	0.0	5.0	26.4	23.8	43.1	0.0	0.0	1.7	100.0
SOLID WASTE:									
SUBTOTAL	0.0	2.4	0.0	0.0	96.4	0.0	0.0	1.2	100.0
SYSTEM TOTAL	8.9	7.1	10.6	32.4	40.3	0.0	0.0	0.7	100.0

Note: Based on actual expenditures for 1984.

TEXAS
PERCENT DISTRIBUTION OF FUNDING SOURCES
USED BY GOVERNMENTAL UNITS FOR INFRASTRUCTURE INVESTMENT

INFRASTRUCTURE AREAS	USER TAXES	OTHER TAXES	USER FEES	FEDERAL GRANTS	BONDED INDEBTEDNESS	OTHER DEBT	PRIVATE FUNDS	MISC	TOTAL
TRANSPORTATION:									
Highways									
Streets & Rds	29.4	14.9	0.0	22.9	28.1	0.0	0.0	4.7	100.0
Mass Transit	0.0	17.3	0.0	78.7	0.0	0.0	0.0	3.9	100.0
Airports	0.0	48.1	0.0	50.2	0.0	0.0	0.0	1.8	100.0
Water Ports	0.0	1.1	27.2	0.0	71.7	0.0	0.0	0.0	100.0
SUBTOTAL	24.3	17.1	1.1	27.3	26.0	0.0	0.0	4.2	100.0
WATER SUPPLY:									
SUBTOTAL	0.0	0.0	0.0	12.2	85.1	0.0	0.0	2.8	100.0
WASTEWATER:									
SUBTOTAL	0.0	0.0	0.0	18.0	80.7	0.0	0.0	1.3	100.0
SOLID WASTE:									
SUBTOTAL	0.0	11.8	14.1	0.0	74.1	0.0	0.0	0.0	100.0
SYSTEM TOTAL	15.3	10.8	0.8	22.9	46.9	0.0	0.0	3.4	100.0

Note: Based on actual expenditures for 1984.

The data from New Jersey, Texas, and Florida, as shown in Table 3, along with the data collected from the other states included in the Panel's case study approach, do not comprise a sufficiently large sample to generalize for all states. Even so, the characteristics identified in these states correspond to more general data available on overall patterns of financing at the state and local level.

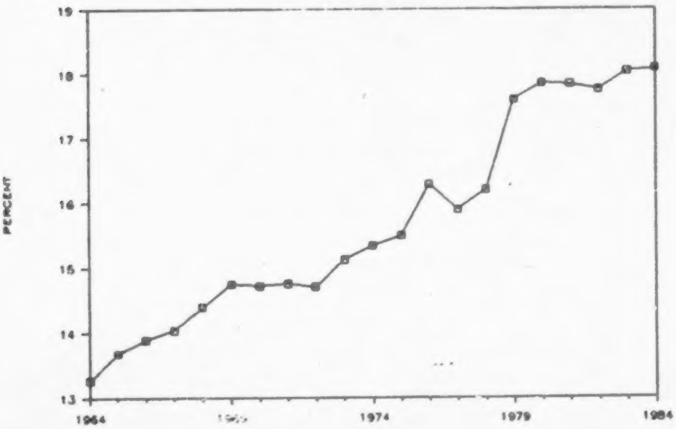
Federal grants are an important source of funds for state and local infrastructure investment, providing 23 percent of funding in Texas, 33 percent in New Jersey and close to 40 percent in Florida in the year for which data was reported. The federal government is the dominant investor in all three states in transportation and makes a sizeable contribution in the three states for wastewater treatment facilities.

Bonded indebtedness includes general obligation (GO) debt and revenue bonds. Bonded indebtedness is the single largest source of funds available for infrastructure in both New Jersey and Texas. Information collected by the Panel in the study states and in the field hearings reflected state and local reliance on bonds as a capital funding source and revealed a growing concern over the continued access of state and local governments to the tax-exempt bond markets.

User taxes and fees, which are excise taxes on gas, liquor, and other commodities and services, are important sources of public works funding at the state and local level. User taxes are particularly important in transportation finance, second in importance only to federal grants, providing approximately one-fourth of all funding in that category of need. Revenue from user fees is collected in the study states primarily for water supply, wastewater treatment, and airports.

Borrowing through bonded indebtedness provides a substantial and growing source of funding. The shift toward revenue bonds emphasizes the reliance localities increasingly place on user fees, in place of traditional reliance on general taxation to both pay for facilities and secure debt. As a revenue source for local governments, user fees have grown by nearly 40 percent over the past twenty years, now accounting for over 18 percent of local revenues (see figure 4).

Figure 4
Local Government Utilization of User Fees



Source: Chambers Associates Incorporated from Bureau of the Census Data, Government Finances various years.

User fees have a number of advantages. When calculated carefully, they "establish a more direct relationship between prices and consumption and real costs."[5] By a more realistic reflection of construction and maintenance costs of facilities, in relation to use, user fees facilitate comparisons to the cost of alternatives. Further, users who pay a fee for service are more demanding of quality services, thus encouraging the service provider to upgrade or better manage the service. Finally, long-term project financial planning is easier when the revenue source is stable and reliable. User fees also are often deposited into a dedicated fund, protecting them from usage for other governmental functions or services.

Probably the most general application of user fees to the cost of public works is in the area of water and sewer services. While there has been a tendency to undercharge for the actual service, especially in the provision of sewage collection and treatment, new environmental control requirements have necessitated major increases in rates to pay for increased operational costs as well as the debt service on the bonds that financed the treatment facility. Even so, user fees are working to the benefit of the system. In a study of federal aid for water distribution systems, the General Accounting Office found that user charge-financed systems had better management and financing. Analysis of these systems indicated that they showed reduced leakage, improved conservation efforts and better control of nonrevenue-producing uses.[6]

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[5] Choate, Pat, "An American Public Works Financing Strategy," Constructor, April 1985, p. 29.

While there are many advantages, there are also drawbacks to user fees. Fees are often criticized for being disproportionately expensive for the poor. Analysis of user charges in transit systems, for example, has shown that in certain cases the poor actually subsidize the cost of the non-poor. This is especially true when fares are not based on trip length, since the poor tend to take the shorter, inner city trips, but still pay the same amount as the more prosperous longer distance commuters.[7]

A more fundamental criticism is that the fee is regressive--as a percent of personal income, the poor pay more for the same service. A one dollar bus trip is much more expensive to an individual who earns $10,000 than to one who earns $50,000. Though rates for the poor are theoretically feasible, practically, they are difficult to efficiently implement.

INFRASTRUCTURE BANKS

In the study states and in testimony from other states and localities, the Panel learned that local governments must look increasingly to debt financing to meet growing demands for capital expenditures on infrastructure facilities. Many states are actively pursuing measures that assist the localities in the borrowing market by improving their relative credit standing or otherwise improving their borrowing capacity.

To assist and facilitate local borrowing, many states have created or are considering the establishment of borrowing arrangements such as bond banks and revolving loan funds targeted for infrastructure. This section discusses these emerging initiatives characterized generically here as infrastructure banks, and how they can work to improve inadequate investment in infrastructure at all levels of government.

A recent Environmental Protection Agency survey indicates that 38 of the 50 states (76 percent) have already enacted or are considering legislation which would create either a revolving loan fund or bond bank. By late 1986, 14 states had operational revolving funds and 10 had banks. Table 4 summarizes state activity in this area.

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[6] Ibid., p. 24.

[7] Advisory Commission on Intergovernmental Relations, Financing Public Physical Infrastructure, Washington, D.C., June 1984, p.27.

Table 4

States with Operational Financing Programs

Revolving Funds		Bond Banks
California	Virginia	Alaska
Connecticut	Washington	Illinois
Georgia	West Virginia	Indiana
Montana	Wyoming	Maine
New Jersey		Mississippi
Ohio		Nevada
Oklahoma		New Hampshire
Oregon		North Dakota
Texas		Oregon
Utah		Vermont

Source: Environmental Protection Agency, Office of Municipal Pollution Control, *State Alternative Financing Programs for Wastewater Treatment*, 2nd Edition, January 1986, p. 4 and from information obtained in regional hearings of the Private Sector Advisory Panel.

Three categories of infrastructure banks were examined: revolving loan funds (RLFs), bond banks, and a combination of the two. Relatively speaking, the RLF may be more effective, but is more expensive for a state to capitalize and results in less leveraging of additional capital. The bond bank is comparatively inexpensive, but its function is limited to credit assistance. The combination of the revolving loan fund and the bond bank may for many states be preferable since in offering both loans and credit assistance, it affords alternative financing options that can be tailored to the particular needs and circumstances of a community.

Most of the existing infrastructure bank mechanisms are dedicated to specific uses--rural water supply, wastewater treatment, roads, and highways--rather than for general infrastructure purposes. They are designed to facilitate the financing of public works projects either through direct lending or by issuing debt on behalf of participating local governments.

The advantages of an infrastructure bank are usually ascribed to the following criteria:

1) leveraging public financial resources to increase capital investment;

2) providing a stable, continuing source of funds;

3) offering flexibility to tailor funding to project requirements; and

4) encouraging more efficient public works investment decisions by requiring careful planning, repayment of project capital, and flexibility in investing in the variety of public works needs.

Revolving Loan Funds

A revolving loan fund (RLF) is a public sector bank capitalized by government sources and dedicated to providing financial assistance to participating governments for specific purposes. The typical form of assistance is a long term loan with interest below the market rates, although RLFs can also provide grants. Since grants are not repayable to the fund, they limit the future capacity of the fund to assist project funding. Consequently, the share of the fund available for grants should be limited if the equity in the fund is to grow.

If properly conceived and managed, a RLF has the advantage of providing a sustaining and expanding source of financing for the purposes for which it was created. Through careful management of resources, savings can be obtained that, although seemingly small in the early periods, can develop into a sizable sum over time.

There is no trick to the revolving fund; it is neither a quick-fix nor a no-cost strategy. But, by carefully using what limited funds may be available in the short run, a sizable, permanent source of funds can be developed in the long run.

Capitalization

Like any loan fund, a revolving fund needs an initial infusion of capital from which to initiate the loan process. Seed capital can be derived from a variety of sources. But to work effectively the fund requires either a large up-front contribution or a considerable long-term commitment. This capital requirement can be a major limitation in establishing a working fund.

Funds for capitalization may come from appropriations, bond issuances, diversions of existing public works project grants or loans, dedicated tax increments, lottery proceeds, or other revenue sources. A sample of the capitalization method of certain states that have established revolving funds for infrastructure purposes is shown in Table 5.

Table 5

Funding Sources of Five Revolving Loan Programs

State	Capitalization Source	Resultant Funding Level
New Jersey	G.O. Bond issue.	$190 million
Oregon	Percentage of lottery proceeds and G.O. bonds.	$18 million. Also authorized $100 million in bonds.
Texas	G.O. Bonds.	over $1 billion
Utah	Appropriation.	$50 million.
Washington	Dedicated revenue from utility and real estate conveyance taxes.	$20 million per year.

Sources: Private Sector Advisory Panel on Infrastructure Financing regional hearing records and Environmental Protection Agency, State Alternative Financing Programs, 2nd Edition, January 1986.

Note: Each of the above states may also have other, pre-existing loan programs.

The most efficient source of capital would be one closely tied to the services financed, such as the gas tax for transportation-related needs or user charges from utility services. Efficiency, however, is not always achievable in public financing. Pre-existing uses of such user-related revenues and the limits on the marginal capacity of utilities to increase fees have necessitated consideration of other sources of capitalization. There is a certain equity, nevertheless, in the operation of a RLF, since the funds used by the borrower to repay the loans are most often derived from user-related fees or taxes.

Operations

Once capitalized, a RLF will provide grants or loans at a below-market rate of interest. Loans may be made to other levels of government or to specific projects, depending upon how the fund was set up. Loan payments to the RLF can be re-lent (thus creating the "revolving" action) to enhance the impact of the fund.

Some of the less frequently cited benefits of a revolving fund are the efficiency it encourages, including short-term gains from lower debt service costs, more efficient construction and management, and long-term gains realized through the requirement for improved planning and budgeting techniques.

Required repayment of project funds provides an incentive for efficient project construction and management. Since most of the projects will be revenue-generating, the local government also has a strong incentive to bring the project into service as quickly as possible and to set user fees at levels sufficient to cover debt service and operation and maintenance.

The State of Texas has one of the oldest state revolving loan funds, which provides an example of the value of such funds over a long period of years. Established in 1957 to provide assistance for water resources development, it was subsequently amended to include the purposes of water quality enhancement. Over the years it has provided more than $1 billion in state issued G.O. bonds. The proceeds of the bonds are used to buy political subdivision bonds. As the bonds are paid, the proceeds are returned to the fund account.[8] Ohio also has a revolving loan fund managed by the State Water Development Authority which, since 1969 (according to EPA), has funded in excess of a billion and one-half dollars in projects.

While a number of other states also have revolving loan funds of various types and capacities, the State of Washington recently created a sophisticated trust fund approach which might be considered an exemplary system for assisting localities in infrastructure investment.

Created in 1985 as the Washington State Public Works Trust Fund, the revolving loan fund was designed initially to assist local governments in financing public works repair and replacement projects. As described on the adjacent page, the Trust Fund is designed to include several of the criteria previously identified as comprising an effective funding mechanism.

First, it leverages public resources--its own and those of other public agencies. A minimum of ten percent of the cost of the project was required from the loan applicant in the 1987 loan cycle. To provide an incentive to increase the local project share, a locality can obtain a reduction on the interest charged on its Trust Fund loan by increasing the local contribution to the project. In the loan cycle for 1987, this resulted in loans from the Trust with an average of a 38 percent local match. The fund also has the capacity to leverage federal dollars. Loans can be made to localities to fund the local matching share of state or federal grants. One-third of the projects financed by the Trust Fund or proposed for Trust Fund financing in the 1986 and 1987 loan cycles include funds from other state or federal programs.

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[8] Texas Infrastructure: Elements and Issues, op. cit., p.50.

The Washington State Public Works Trust Fund

The Washington State Public Works Trust Fund established by legislative action in 1985, provides low-interest loans and technical assistance to eligible local governments in Washington State.

The Trust Fund program is the result of a three-year development process which began in 1983 with a public works inventory developed to assess the scale and character of critical public works needs in the state.

The Trust Fund is managed by a 13-member Public Works Board composed of members representing local governments and the engineering and financial communities. Members are appointed by the governor to four-year terms. Staff support for loan, policy development, and technical assistance functions is provided through the Public Works Division of the Washington State Department of Community Development.

Projects in a wide range of basic infrastructure systems, including roads, bridges, storm sewer, sanitary sewer, and domestic water systems, are eligible for funding. Trust Fund financing may be provided to cities, counties, and special purpose districts. Applicants must have a long-term plan for financing their public works needs. Loans are presently offered only for the purpose of repair, replacement, rehabilitation, or reconstruction of existing eligible public works systems in order to meet current standards and to adequately serve the needs of existing service populations. Since 1985, interest rates on Trust Fund loans have varied between one percent and three percent with the term of loans limited to the useful life of the public works improvements being financed.

At the direction of the Public Works Board, proposals for public works projects are solicited annually by the Public Works Division of the Washington State Department of Community Development. Since substantially more Trust Fund dollars are requested than are available, local jurisdictions must compete for the available funds. The Public Works Board annually submits a prioritized list of those projects recommended to receive low-interest financing to the state legislature, which may delete projects submitted but not add or reprioritize them. The legislature reviews the list and indicates its approval through the passage of an appropriation from the Public Works Assistance Account to cover the cost of the proposed loans.

While several key features make the Public Works Trust Fund Program unique, of special importance is the clear focus on local efforts to manage public works systems--where critical management, planning, and financial decisions must occur on a regular basis. The Trust Fund's appeal is not that it represents a new source of funds to replace existing grant programs, but that it is rather a new way for local governments to plan public works improvements and schedule the costs. The program is intended to help local governments manage their resources more effectively to take advantage of the opportunities in a rapidly changing fiscal and intergovernmental environment.

Most significantly, as a feature of its own interest repayment and equity development cycle, the Trust leverages its own funds. With an estimated direct ratio of better than 2:1 in project financing to equity investment, the state estimates in the next twenty years that the fund will convert a total of $380 million in equity contributions into upward of $712 million in financed projects.

Second, the fund has a reliable source of revenue for continued funding. The Trust Fund is capitalized on a "pay-as-you-go" basis with dedicated revenues from utility and sales taxes on local water, sewer and garbage collection and from a portion of the state's real estate conveyance tax. Revenues in the first year approached $18 million and will grow in succeeding years with the growth of dedicated tax revenues, the repayment of loans from previous loan cycles, and the interest on monies deposited in the Trust Fund account.

The state legislature must annually appropriate the collected revenues into the Fund. This could inject an element of instability into the Fund, especially if the Fund administration becomes unpopular or enmeshed in political disputes. However, the fact that the revenue does come from a dedicated revenue source reduces this possibility considerably.

Third, the latitude for the Fund and its administration encourages a high degree of flexibility in adapting the loan to the needs of the locality. Projects in a wide range of basic infrastructure systems, including roads, bridges, storm water run-off control, sanitary sewers, and domestic water systems are eligible for loans. Establishment of annual review and selection criteria allows the state to tailor the fund to match state objectives and better meet the changing needs of the applicants. The local match requirement, interest rates and selection criteria can change each year, depending on need and circumstances.

Fourth, the Fund includes a strong focus on local efforts to manage public works systems. Requirements, described in Chapter V of this report, for local capital planning, project prioritization, and budgeting for management and operations, assure that local governments have gone through a limited but useful planning and budgeting exercise. They have inventoried needs, selected priorities, and examined the full implications of facility management and operational costs and debt service, in the context of local fiscal capacity. Washington State officials consider this the most important aspect of the Washington State program and one which should be adopted in all state funded infrastructure assistance programs.

Ensuring longevity has been a concern of states establishing revolving loan funds. Bad loans, leading to major defaults or inadequate procedures for collection of repayments, can jeopardize the financial stability of such funds. The Congressional Budget Office has observed that "a single large default, or simply a poor record of collecting repayments, can jeopardize the overall financial stability of the fund."[9]

If an adequate loan loss reserve is established, the risk of default is considerably reduced. There is, however, a trade-off. By establishing a loan loss reserve, the fund is reducing its lending ability, thus decreasing the rate of development of the fund's own equity level.

Bond Banks

Bond banks are financing mechanisms which help borrowers to gain access to the financial market under more favorable terms. The basic premise is simple: issuing debt on behalf of a group reduces risks and the associated interest costs. By pooling a number of small, long-term debt issues, the participants are able to obtain financing at a rate lower than if they were to go to the credit market independently.

Mainly, participants in bond banks are small units of government with low or unrated bonds. Marketing, underwriting, and financial fees are generally higher since small issues are less economical.

The salient advantages of the bond bank for this group of potential borrowers are:

1. Backing the issues with the bond bank's debt service reserve, state guarantee, or other forms of credit enhancements enable the composite issue to obtain a superior credit rating, reducing interest costs;
2. Diversification reduces the risk of default, further reducing interest costs;
3. Fees and up-front costs are reduced as a percentage of the total issue; and
4. Larger issues are more easily marketed. They are more attractive to the underwriter and major bond buyers find larger bond offerings easier to sell in the secondary market.

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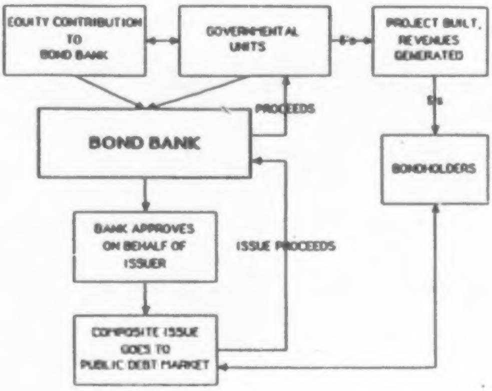
[9] Congressional Budget Office, Federal Policies for Infrastructure Management, July 1986, p. 105.

Much of the enhancement of a bond bank is also derived from other features, such as the debt service reserve. The level of the reserve is usually expressed as a percentage of anticipated debt service. The Indiana Bond Bank, for example, has a debt service reserve fund which is "no less than the amount required for the payment of interest and principal in the succeeding fiscal year or 125 percent of the average annual debt service on all outstanding bonds in all succeeding years."[10] By guaranteeing obligations with this reserve, the bank is able to issue up to ten times the level of debt to reserve. The actual ratio of debt to reserve will vary depending on prevailing interest rates, debt outstanding, and legal limitations.

The bond bank itself may obtain the capital necessary for the debt service reserve fund through assessments on participating governments, appropriations, grants or loans, special taxes or fees, or some combination. The net gain is realized through the economies of scale, reductions in administrative costs, and from the lower interest rates as a consolidated issue.

Figure 5
Bond Bank Operations


COUNTY CONTRIBUTION TO BOND BANK
GOVERNMENTAL UNITS
$s
PROJECT BUILT, REVENUES GENERATED
PROCEEDS
$s
BOND BANK
BONDHOLDERS
BANK APPROVES ON BEHALF OF ISSUER
ISSUE PROCEEDS
COMPOSITE ISSUE GOES TO PUBLIC DEBT MARKET

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[10] Towfighi, Shah and C. Kurt Zorn, The Indiana Bond Bank--An Initial Evaluation, A background paper prepared for the board of Indiana Infrastructure Inc., December 1985, p. 15.

Figure 5 depicts the workings of a traditional bond bank. In this example, localities (governmental units) develop capital investment plans and approach the bank with their requests. Generally the board will require information from the applicant such as the amount of revenue and general obligation debt already outstanding, the incremental debt to be incurred by the proposed loan, state and local property valuations, tax levies and taxes receivable, and population, employment and economic outlook in the locality. The board then decides on the merit of proposals and consolidates proposals it will fund into one large issue.

Once a "minimum size" has been attained,[11] the bond issue is sold to an underwriter, typically in a negotiated sale. In this type of sale, the underwriter is often accorded the sole right to the packaging, sale, and distribution of the issue. The issue is taken to the public debt market and the capital obtained. Proceeds are then, in effect, loaned to the localities. Projects are built, revenues generated, and bondholders repaid.

The first state bond bank was created in Vermont in 1970. Since then bond banks have been established in Maine, New Hampshire, Alaska, North Dakota, the Commonwealth of Puerto Rico, Nevada, Oregon, Illinois, and Indiana. Several of these are patterned after the Maine Municipal Bond Bank, especially with respect to security provisions, which are worth identifying here:

a) In the case of general obligation bonds, the full faith and credit of the participating local government stands behind the issue. For revenue bonds, revenues or special assessments related to the funded facility stand behind the subscribed issue.

b) The reserve fund also stands to secure the issue in the event of non-payment by the borrowing locality. The reserve fund normally includes sums necessary to insure the maintenance of the debt service requirement for a year. Additionally, the enabling legislation provides that annual appropriations shall be made to restore the reserve fund to its required level.

c) Finally, the fund has an "intercept mechanism" where, in the case of a municipal default or an obligation held by the bond bank, the bank may ask the state treasurer to withhold any state funds otherwise earmarked for the defaulting borrower.

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[11] For a discussion of what an appropriate minimum size might be, see "Bond Banks: A State Assistance Program That Helps Reduce Borrowing Costs," Public Administration Review, March/April 1983, pp 108-113.

The Indiana Bond Bank, which was a focus of the Advisory Panel review, is modeled closely after Maine's bank. However, in its security provisions there is one subtle but significant difference that, according to close observers in the state, has limited the ability of the bank's bonds to be marketed to commercial banking institutions within the state, as well as limiting the rating of the bonds to "single A."

Where the Maine bank has the assurance that the legislature "shall" appropriate necessary funds to annually restore the revenue level of the fund, the Indiana law provides only a discretionary "may." The reason for this, as explained in an evaluation of the bank by Indiana Infrastructure, Inc., is that the state constitution restricts the state from incurring debt, "Therefore, any requirements, such as that implied by the word "shall", to appropriate funds to restore and maintain the Reserve Fund is considered by Indiana lawmakers tantamount to the state assuming the bonded debt of its political subdivisions."[12]

Indiana's security provisions look quite substantial, however, when compared to those of the Illinois Development Finance Authority which operates a pooled financing arrangement to assist small communities (under 25,000) in the state. The state does not back the bonds with a moral obligation pledge. Moreover, the reserve fund is equal to only six months principal and interest requirements, rather than the annual requirement in most state funds. Nevertheless, the Illinois Authority provides a needed service to the state's small communities.

Like most of the other state bond banks, the Indiana bank charges no subscription fees. Rather than charging the subscribing localities for the fund management and operating costs, the Indiana bank uses the return from the investment of its revenue funds to cover operations. The absence of the fees, at least in the case of Indiana, has been an inducement for some local entities with established bond ratings achieved through experience in the market to go through the state bond bank, instead of going directly to the market.

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[12] Towfighi and Zorn, _op_. _cit_., p. 16.

Indiana's Bond Bank Experience

The State of Indiana has a very large number of political subdivisions--2,865 as of January 1982. Of these, 2,195 entities may issue general obligation bonds or some other form of debt that is property tax-based. 897 of the 2,865 subdivisions are special districts, 670 of which have no power to tax and therefore may issue revenue bonds but not general obligation bonds. Many of the subdivisions, which include state universities, counties, cities, towns, schools, libraries, and nonprofit corporations as well as associations which lease facilities to local governments, are small unrated entities that find it difficult to gain access to the bond market. The Indiana Bond Bank exists to assist these subdivisions.

The first series of bonds in the amount of $17.9 million was offered by the Indiana Bond Bank on April 15, 1985. The offer was made on a negotiated basis and underwritten by one investment banking firm.

Although it is still early, the indicators are that the bank will be of great value to Indiana's many low or unrated political subdivisions. The bank's high rating (A) in conjunction with the advisory services it provides should help to lower issuing costs.[13]

Combined Operations: Revolving Fund and Bond Bank

Many variations are possible for both bond banks and revolving loan funds. Perhaps the most efficient scenario at the state level is a combination of the characteristics of both. The combination takes the greatest advantage of the opportunity for flexibility in the decision-making process. The New Jersey Wastewater Treatment Trust offers one such example.

Combined operations allow a fund to allocate its equity for a mix of grants, loans and credit assistance. This allows the greatest leeway in determining exactly the level of subsidy to provide different projects in different regions or, as in New Jersey, gives the state the ability to ensure borrowers are treated equitably by providing blended loans from the revolving fund and the Trust to achieve a consistent overall financing subsidy to localities.

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[13] *Ibid.*, p. 17.

New Jersey's Environmental Trust

In his testimony in April 1986 before the Advisory Panel, New Jersey Governor Thomas Kean described the success his state has achieved in addressing creatively its infrastructure financing crisis. The state's commitment to problem solving resulted, among other things, in enactment by the New Jersey legislature in 1985 of a group of bills collectively known as the Environmental Trust Legislation. The package consists of bills designed to establish funding mechanisms to address major environmental problems and includes the Wastewater Treatment Trust, the Wastewater Treatment Fund and the Resource Recovery and Solid Waste Disposal Facility Fund.

The Wastewater Treatment Fund and Trust are charged with providing local governments with grants and loans to finance wastewater treatment projects. In practice, the Fund is a revolving loan fund and the Trust is a bond bank. Each is designed to interact with the other to provide a consistent loan subsidy to localities, as shown in Figure 6. Capitalization for the Trust and the Fund was secured through the issuance of $190 million of general obligation bonds, approved overwhelmingly by the New Jersey voters in a referendum of November 1985.

$150 million of the $190 million in bond proceeds was used to set up the Wastewater Treatment Fund. The Fund may make low- or no-interest loans or grants to local governments for wastewater treatment plants. However, if grants are given, only 20 percent of the Fund's initial assets, or a state-wide total of $30 million, may be used.[14]

The New Jersey Wastewater Treatment Trust is the depository for the remaining $40 million. The Trust has a great deal of latitude in the way it operates to assist localities in funding wastewater treatment facilities. It is empowered to borrow money and issue bonds, notes, and other obligations, invest proceeds of those issues, procure insurance to secure the payment of its bonds, and make loans to local governmental units. The trust also has the flexibility to use some of the more innovative financing instruments, such as variable rate bonds, bond anticipation notes, deep discount bonds and zero coupon bonds.[15]

Interest on the $40 million of seed capital will be used to provide the subsidy to borrowers on debt issues. The ultimate objective of the Trust is to provide loans to localities at approximately 80 percent of the market rates.[16]

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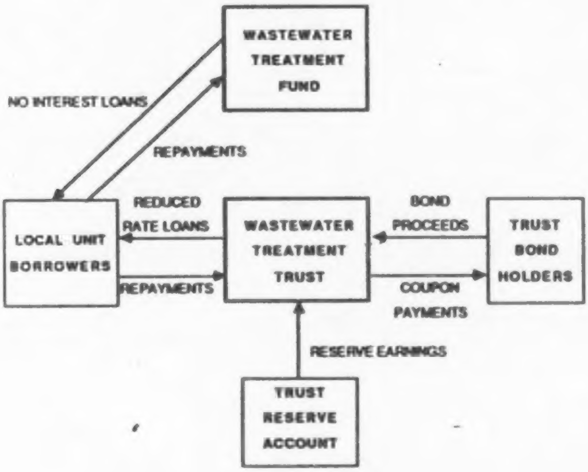
[14] New Jersey Department of Environmental Protection, The New Jersey Study, January 16, 1983, p. 4.

[15] *Ibid*., p. 5.

Figure 6
New Jersey Wastewater Treatment Trust
Flow of Funds


WASTEWATER TREATMENT FUND
NO INTEREST LOANS
REPAYMENTS
REDUCED RATE LOANS
BOND PROCEEDS
LOCAL UNIT BORROWERS
WASTEWATER TREATMENT TRUST
TRUST BOND HOLDERS
REPAYMENTS
COUPON PAYMENTS
RESERVE EARNINGS
TRUST RESERVE ACCOUNT

One of the objectives of the state was to treat all borrowers equitably. Consequently, the Trust and the Fund are designed to work together to provide a consistent level of subsidy to all borrowers. Borrowers receive a portion of their state funding assistance from the Trust and a portion from the Fund.

The Fund is not constrained in the interest rates it must charge because state general tax revenues, not loan repayments, retire the debt issued to capitalize the programs. Therefore, Trust loans, whose rates are more market dependent, are combined with Fund loans to achieve a consistent subsidy level for all borrowers. For example, a loan from the Trust at approximately 80 percent of market rate may be combined with a loan from the Fund at 1, 2 or even 0 percent interest to provide an attractive loan package to the locality.

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[16] State of New Jersey, "Supplement to the New Jersey Study," December 1986, p. 3.

To insure the equitable treatment of all borrowers in the merging of these two loan mechanisms the state devised an approach that pegs the rate of subsidy to the relative level of federal subsidization for wastewater treatment facilities. Since the primary point of comparison for the borrowing communities is a choice between a federal grant (assuming its availability) and a loan, the State Department of Environmental Protection designed the loan subsidy package to be comparable in its assistance level to the grant. Thus, the state has set the combined Fund/Trust loan subsidy to be approximately 30 percent below what would be available if the project were to be funded totally by borrowing at prevailing interest rates.[17]

It is estimated that with the Wastewater Treatment Trust, the Wastewater Treatment Fund and federal funds of approximately $864 million, $2.5 billion (in 1986 dollars) for wastewater treatment facilities will be generated over a 20-year period.[18]

The second revolving loan fund established in the New Jersey Environmental Trust legislation is the Resource Recovery and Solid Waste Disposal Facility. The legislation authorized the issuance of $85 million new state general obligation bonds to be deposited to a Trust. In addition, $50 million in unused state bonding authority and $33 million appropriated from the state's general fund were deposited to the Fund to provide low- and no-interest loans for the construction of public resource recovery facilities and environmental landfills.

Since the money in the Fund revolves and is re-issued, the state estimates that the $168 million will translate into $240-260 million in loans over the next ten years. The state plans to make 15 year loans, interest free, for 14 percent of the project and construction costs.

As Commissioner Richard Dewling explained to the Panel at its Trenton, NJ hearing, "14 percent (of project costs) may not seem like a very large subsidy," but it can have a significant impact on user fees. According to Dewling, the 14 percent subsidy can translate into a 20 percent reduction in the tipping fee at resource recovery facilities.

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[17] Federal grants for construction of municipal wastewater treatment systems are provided at 55 percent of the project's eligible costs. Since a number of associated costs are not "eligible" for grant assistance, the State has defined the realistic level of the grant at approximately 35-40 percent of total cost, and has further discounted the subsidy to reflect the fact that because of limited availability of grant funds, many communities have no realistic possibility of receiving one.

[18] Department of Environmental Protection, op. cit., p. 5.

How Far Will the Dollars Go?

The most important advantage of infrastructure banks is their ability to leverage additional funds. Put simply, this refers to the ability to utilize a given level of equity (capitalization) as collateral for bond sales which increase the volume of investment capital. In this way, a fund amasses more capital, has more money to lend, and consequently more dollars returning as loan repayments which can be re-lent. This aspect is referred to as direct leveraging.

Inherent in the infrastructure bank concept is the idea of indirect leveraging, as well. Indirect leveraging has a much broader definition, but usually identifies those aspects of a program which encourage the investment of money from other levels of government, or parlay available funds from one public program into a comprehensive financing package. A brief discussion of these two concepts, and how they adapt to the infrastructure bank, follows.

Direct Leverage

For infrastructure banks, the degree to which they directly leverage funds is dependent upon the structure of the fund and the terms of its loans or assistance. For example, measured as the ratio of the ultimate level of projects financed to equity, bond banks can leverage a much higher amount of capital than can RLFs. This is true because bond banks only guarantee debt with equity, whereas a RLF actually lends out its equity. Estimates of the degree of financial leveraging for revolving loan funds range from two to four, depending upon the source of capitalization and the time frame. Bond banks, on the other hand, claim leveraged rates from 5:1 in New Jersey to as high as 31:1 in Utah.[19]

This wide differential reflects the different way in which the banks are structured. In New Jersey, for example, the plan for the Wastewater Treatment Trust is to leverage $5 in revenue bonds for every $1 in the reserve. In this manner, interest rates payable on Trust loans may be reduced by approximately 20 percent. In Utah the bank was used to provide credit enhancement, allowing for a much greater degree of apparent leveraging.

Indirect Leverage

The Washington State Public Works Trust Fund has utilized several indirect methods to increase the impact of the limited loan funds on local public works. Some stress the importance of local expenditures as a measure of effort. Others focus on the use of Trust Fund monies to assist local communities in acquiring funds from federal grants or private participants.

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[19] Utah Bureau of Water Pollution Control, "State of Utah Wastewater Project Financial Assistance Program," November 11, 1986, p. 2.

To provide an incentive to increase the share of local project cost-sharing, a jurisdiction can reduce the interest rate on its loans from the Washington Trust Fund by increasing their project share. This resulted in 1987 Trust Fund loans involving an average of 38 percent in locally generated revenues, thus extending the impact of limited state funds by encouraging jurisdictions to commit local funds to finance critical projects.

In a number of states, low-interest loans can serve as the local share required for participation in a state or federal grant program. Interest subsidies further ease the impact of the financial burden caused by local share requirements of various public works programs, which have risen in recent years to as high as 50 percent of total project costs. Of the 76 projects financed by the Washington Trust Fund or proposed for Trust Fund financing in the 1986 and 1987 loan cycles, 26 include funds from other state or federal programs.

Although the Washington Trust Fund is not designed to function as an economic development program in the conventional sense, it does have the effect of leveraging private sector investment. In the 1987 loan cycle, for example, one project recommended for financing involves a city which has applied to the Trust Fund to rebuild a bridge connecting its port facilities to its major industrial area. The cost of this project is shared with a major firm that needs the port for product shipments.

Conclusion

State infrastructure banks offer one opportunity to begin closing the gap between the need for public works capital investment and available public dollars. The creation of these funding mechanisms at the state level is a positive indication that states are taking the initiative to assist their localities in meeting needs.

How much of a contribution can these state funding mechanisms be expected to make toward closing the gap between need and investment? According to data developed by EPA on characteristics of the state infrastructure funds in existence at the end of 1985, total state appropriations amounted to almost $317 million, and total borrowing authority provided in the various funds reached over $2 billion.[20] This basic $2.3 billion investment might leverage several times that amount of funds by the year 2000. Even so, this pales when compared to the infrastructure funding shortfall estimated by CBO to reach a total of $230 billion by the year 2000. If the promise of the innovative approaches of New Jersey, Indiana, and Washington are to lead to a national solution, additional sources of capital to assist states must be identified and made available.

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[20] Missing from these estimates are a number of older state loan and economic development programs which could marginally affect the level of available funding.

Provisions in the Clean Water Act reauthorization providing federal money to capitalize state waste water treatment revolving loan funds will accelerate the establishment of these mechanisms at the state level and increase their initial capitalization by as much as $10 billion. But additional capital will also be needed to assist states and localities in closing the gap between available resources and existing needs and meeting an entire area of new demands dictated by new federal requirements for additional environmental controls.

III. DEBT FINANCING AND TAX POLICY

State and local governments are heavily reliant on the debt market to finance capital investment in a range of public facilities. Faced with an increasing burden to respond to public need for infrastructure services and facilities, states and localities have increasingly turned to the debt markets to raise and leverage capital for these needed investments. To a great extent, however, the relative cost and efficiency of these funding mechanisms are dependent on their tax treatment.

The use of tax-exempt bonds has become increasingly difficult as a direct result of changes in the tax law aimed at limiting proclaimed abuses of some tax exempt issues and increasing revenues to the Federal Treasury. A series of changes in the tax code, culminating in the Tax Reform Act of 1986, has altered the ground rules and limited the availability of tax exempt issues for a range of public purposes. The full impact of these new provisions and their effect on the public debt market are still a matter of conjecture, but there is little doubt that, overall, they will increase the cost of publio borrowing and limit the access of state and local governments to the financial markets.

This chapter describes the public finance aspect of the tax code, explains its interrelationship with the public debt market, and identifies those elements of the new federal tax law that will affect the capacity of state and local governments to meet their own infrastructure investment needs.

Debt Financing

Traditionally, about one-third of state and local capital investment was financed through bonded indebtedness. In recent years, reliance on debt financing has increased significantly. Few communities have the kind of cash surplus necessary for large capital outlays, and without federal or state funding assistance they have no effective alternative to borrowing.

In 1984, total state and local outstanding debt was in excess of one-half trillion dollars. States carried $186.4 billion in debt and all localities together had $318.7 billion for a cumulative state and local total of $505 billion, or $2,138 per capita.[1]

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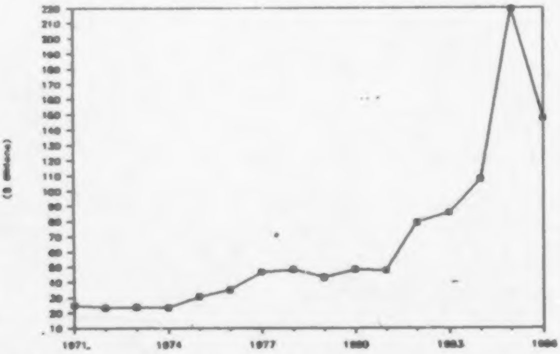
[1] U.S. Dept of Commerce, Government Finances in 1983-1984, GF84 No. 5, p. 40.

Beginning in 1981, the volume of tax-exempt issues climbed sharply. In just five years, the volume of tax-exempt debt grew more than 300 percent from just under $50 billion in 1981 to over $200 billion in 1985 (see Figure 1). The volume crested in late 1985 in anticipation of tax law changes. More than one-fourth of the volume (and one half of the volume increase) in 1985 was due to refinancing, as cities, counties and states moved to lock in lower interest rates for existing debt.[2] Volume declined substantially during 1986 while issuers and subscribers waited for the final results of the tax reform effort.

Figure 1
Volume of Long-term Tax-exempt Securities



Source: Public Securities Association

While lower interest rates and other factors contributed to the increase in tax-exempt debt issuance from 1981 through 1985, it is no accident this period coincides with the beginning of the Reagan Administration and its articulation of a policy of "New Federalism." The cornerstone of New Federalism was a formal proposal to shift financial and fiduciary responsibilities in a range of domestic program areas to state and local government. The proposal generated a great deal of controversy over how the costs and responsibilities of government would actually be redistributed and defined among the various levels of government. Despite lengthy negotiations, the policy was never embraced by the states and localities.

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[2] Public Securities Association, Municipal Market Developments, 1984 and 1985.

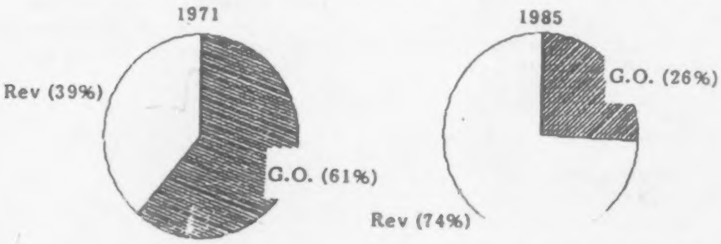
While the formal plan was abandoned, however, the Reagan Administration pursued the policy instead through the budget and appropriations process. Grants to state and local governments in many areas diminished significantly in the 1980-1985 period, as the tables in Chapter I on federal programs illustrate. The fact that state and local governments turned as they did to the debt market to finance their capital spending is a clear indication that they heard the message coming from Washington and responded accordingly. Knowing they could not depend on federal funds with any certainty, they pursued available alternatives.

Another factor contributing to both the growth and change in the type of debt financing over this period was the "taxpayers' revolt" of the late 1970s. The tax movement, attributed to disaffected taxpayers, emerged as a recognized phenomenon with the passage of Proposition 13 in California in 1978. Growing discontent among taxpayers, particularly property owners, over high tax rates led to the enactment of tax limitation statutes in a number of states, generally limiting the amount of property and other taxes that could be imposed by both state and local governments. These governments then turned increasingly to the use of revenue bond financing wherever possible, rather than general revenues raised through taxation.

Still another factor contributing to the increased use of tax-exempt bonds, according to Treasury Department estimates, has been the rapid growth of "private activity" debt in recent years. In 1980, private activity bonds represented approximately one-third of the total long term tax-exempt market. By the end of 1985, these bonds accounted for over one-half of that market.

New federalism, the taxpayer's revolt and the increase in private activity debt have significantly altered the characteristics of the tax-exempt debt markets. Not only did volume increase, but it shifted from predominantly general obligation issues backed by the full faith and credit of the government to issues backed by expected revenues from the project. As illustrated in Figure 2, general obligation debt as a percentage of total long-term municipal debt declined from 61 percent in 1971 to 26 percent in 1985.

Figure 2
Relative Shares of General Obligation vs. Revenue Debt



Source: Public Securities Association

Changes in Investor Demand

Commercial banks, property and casualty insurance companies and higher income households traditionally have been the principal investors in the tax-exempt bond market. During the late 1960s, commercial banks were the dominant purchasers, but by the early 1980s bank purchases of tax-exempt bonds had leveled off at approximately 30 percent of new offerings and will diminish still further due to recent changes in the tax code.

Several factors account for the declining participation by commercial banks in the tax-exempt bond market. The deregulation of interest rate ceilings on bank deposits, accompanied by the growth of substitutes for those deposits--e.g., money market mutual funds--was one factor. Tax legislation passed in 1978 reduced maximum corporate tax rates beginning in 1979. This too lessened the attractiveness of commercial investment in tax-exempt securities.

The Tax Reform Act of 1986 (TRA) may have dealt the fatal blow to commercial bank investment in tax-exempt issues. Before passage of the 1986 law, banks were allowed to deduct 80 percent of their interest expenses that were allocable to the purchasing or carrying of tax-exempt bonds. The allocation was made according to the ratio of the average annual basis of tax-exempt bonds to the average annual basis of total assets. The Tax Reform Act of 1986 repealed this deduction.

Property and casualty insurance companies purchased almost 50 percent of new tax-exempt offerings during the period 1977-79. Burgeoning underwriting losses within the insurance industry--$21 billion in 1984 alone--have significantly slowed purchases of tax-exempt debt by those investors. Tax reform has the potential to slow them even further, as it requires property and casualty companies' loss reserve deduction to be reduced by 15 percent of tax-exempt income (to date, however, this potential has not been realized).

Historically, the household sector has filled the gap between the supply of new tax-exempt securities and the demand for those issues by institutional investors. Households were a constant but not major component of the tax-exempt market. Recently this has changed. During the late 1970s, high yields and the growth of mutual bond funds (considered a component of household investment) contributed to the rapid expansion of the household as a primary investor in the tax-exempt bond market.

Today households are the principal investors in tax-exempt securities, acquiring, according to one witness at an advisory panel hearing, "over 70 percent of the newly issued debt."[3]

The attractiveness of tax-exempt bonds to the household investor is strongly influenced by the marginal tax rate of the individual taxpayer. As the rate changes--a function of income and changing tax law--the rate of return on the tax-exempt securities relative to taxables must also change to maintain its marketability. For example, as shown in the table below, if in 1984 taxable bonds yielded 11.94 percent, the equivalent yield necessary to make a tax-exempt bond attractive to an investor in the $35-46,000 income bracket would be 8 percent. If taxable yields were to hold at approximately 12 percent, that same investor, because of changes in the marginal tax rates in 1987, would now demand tax-exempt debt paying close to 8.75 percent--nearly a full percentage point higher. For investors in higher brackets, this effect will be even more pronounced when the full rate reduction goes into effect in 1988.

Table 1:
Taxable Equivalent Yields of Municipal Bonds by Tax Bracket

Income (000s)	Year	Tax Bracket	Equivalent Yield if Tax-exempts Pay:				
			8.00	8.25	8.50	8.75	9.00
35.2-45.8	1982	39	13.11	13.52	13.93	14.34	14.75
	1984	33	11.94	12.31	12.69	13.06	13.43
	1987	28	11.11	11.46	11.81	12.15	12.50
	1988	28	11.11	11.46	11.81	12.15	12.50
45.8-60.0	1982	44	14.29	14.73	15.18	15.63	16.07
	1984	38	12.90	13.31	13.71	14.11	14.52
	1987	35	12.31	12.69	13.08	13.46	13.85
	1988	28	11.11	11.46	11.81	12.15	12.50
60.0-85.6	1982	49	15.69	16.18	16.67	17.16	17.65
	1984	42	13.79	14.22	14.66	15.09	15.52
	1987	35	12.31	12.69	13.08	13.46	13.85
	1988	33*	11.94	12.31	12.69	12.15	12.50

* (For incomes over $71,900)

Sources: Chambers Associates Incorporated from analysis of Tax Reform Act of 1986, and Trends and Changes in the Municipal Bond Market as They Relate to Financing State and Local Infrastructure, U.S. General Accounting Office, GAO/PAD-83-46, September 12, 1983. Assumes tax payers file joint return.

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[3] Testimony of Arthur A. Blumenfeld, Immediate Past President, Government Finance Officers' Association, before the Private Sector Advisory Panel on Infrastructure Financing, Albuquerque, New Mexico, April 4, 1986.

Although the difference in yields between tax-exempt and taxable bonds varies, the relative yield requirements remain fixed within a specific tax bracket. As a result, the cost to issue tax-exempt relative to taxable debt has increased, and so too, has the cost of state and local governments to pay for public works facilities with long-term debt.

A further increase in the relative cost of tax-exempt debt is the expected result of another provision of the Tax Reform Act of 1986. Interest on certain types of tax-exempt bonds has been included in the alternative minimum tax, reducing their attractiveness to individual investors. Together, the changes in the bond market due to tax reform will drive the interest on state and local obligations upward relative to taxable interest rates, and increase the cost of public debt financing.

As a group, household investors show far greater diversity of demand than do other major investor groups and require a greater diversity of investment alternatives. As they have come to dominate the public securities market, innovative mechanisms have been developed to cope with their varied investment needs. Specifically, more traditional forms of debt have been "repackaged" to alter the traditional risk-reward relationships between borrowers and lenders.

Reflecting on the impact of these modifications, a city official of Albuquerque, New Mexico, told the Advisory Panel in April:

> "When interest rates increased dramatically in the late 1970s, we looked for ways of financing for which we would not have to pay 10 to 13 percent interest rates. With the cooperation of bond attorneys, underwriters, banks and rating agencies, in fact the entire investment community, we were able to finance improvements at about one-half of the prime rate, plus another half percent of other costs. We accomplished this by taking away almost all credit risks from the investor by obtaining a letter of credit issued by a money center bank or of a triple-A rated foreign bank, and by shifting interest rate risk to the city."[4]

As alluded to above, changes in debt financing techniques include enhancing the credit worthiness of borrowers by shifting credit-related risks to third parties and shifting interest-rate risk from the lender to the borrower. A third change not mentioned includes the use of a variety of debt instruments, thus increasing the types of returns available to investors. Appendix A defines the various new and traditional debt instruments.

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[4] Testimony of Montrose G. Simms, Assistant Director, Department of Finance and Management, City of Albuquerque, before the Private Sector Advisory Panel on Infrastructure Financing, Albuquerque, New Mexico, April 4, 1986.

Federal Tax Laws and Their Effect on Infrastructure Financing

In recent years, the ability of state and local governments to meet their infrastructure needs through both traditional and innovative forms of debt financing has been affected to an ever greater extent by federal tax legislation. Increasingly severe restrictions on the use of tax-exempt bonds--particularly industrial development bonds (IDBs)--have made this form of financing far more difficult and costly than it was a decade ago.

The changes that have been made in recent years in tax provisions affecting infrastructure financing show a narrow focus on the part of federal legislators on revenue considerations and perceived abuses. At the same time, these legislators have shown little concern for the essential role that these provisions play in state and local governments' ability to provide services and manage their financial affairs.

The recent enactment of the Tax Reform Act of 1986 (TRA) has particularly serious implications for infrastructure financing and capital formation. The tax-exempt bond provisions will reduce sharply the volume of state and local IDB issues and will make even traditional governmental bonds more difficult and costly to issue. In addition, as discussed in Chapter IV, these and other provisions will force a rethinking and restructuring of privatization efforts.

History

Beginning with the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA), Congress has imposed an increasingly comprehensive series of restrictions on state and local tax-exempt bond issues, and in particular on industrial development bonds (IDBs), or so-called "private purpose" or "private activity" bonds.[5] The TEFRA restrictions were relatively mild: public hearing and approval requirements and reporting requirements for IDBs, restrictions on bond maturity in relation to the life of assets being financed, restrictions on cost recovery deductions for many IDBs, and new restrictions on small-issue IDBs.

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[5] Prior to TRA, any bond that exceed the private use and security interest thresholds described on pp. III-9 was classified as an IDB. IDBs and bonds more than 5% of whose proceeds were loaned to private persons (private loan bonds) were collectively referred to as "private purpose bonds." TRA now classifies any bond failing the use and security interest tests, as well as private loan bonds, as "private activity bonds." This connotation and the "private purpose" term are very misleading, as bonds falling within these categories are often used for clearly public purposes such as sewage treatment facilities, solid waste disposal plants, and water supply systems.

More serious restrictions came into effect with the passage of the Deficit Reduction Act of 1984 (DEFRA). The most important restriction in DEFRA was the imposition of a state-by-state cap on the volume of most types of IDBs that could be issued each year. For the first time, state and local governments faced the possibility of not being able to issue IDBs for all their infrastructure and other public needs, and of having to choose among competing priorities. DEFRA also further tightened the cost recovery restrictions, denied a tax exemption for most obligations issued with a federal guarantee, added new restrictions on the uses to which IDB proceeds could be put, and imposed a rebate requirement on arbitrage earnings on IDBs invested in obligations unrelated to the bond's exempt purpose.

The motivation behind the restrictions imposed in 1982 and 1984, as well as those in the Tax Reform Act of 1986 which are described below, was concern over the growing volume of tax-exempt bonds, and particularly the growth of "private purpose" bonds both absolutely and as a proportion of all issues. At a time when the budget deficit was emerging as a critical problem, this growth was seen as a serious drain on the federal treasury; and legislators began to question whether sufficient public value was being received for this "tax expenditure." This concern was fueled by some areas of real abuse, particularly with small issue IDBs, whose proceeds often benefited a single private business more than the general public.

However, the narrow focus on tax-exempt-bonds as a drain on federal revenue, rather than as a means by which state and local governments conduct their financial affairs and provide essential public services, has led to provisions that go far beyond any necessary correction of abuses. These provisions impose restrictions that greatly constrain state and local autonomy and threaten the loss of financing for projects whose function is clearly to serve the general public.

Tax Reform Act of 1986

The Tax Reform Act of 1986 (TRA), most of which became effective on January 1, 1987 (some tax-exempt bond provisions became effective September 1, 1986), is the latest and most comprehensive of the measures restricting the use of tax-exempt bonds. TRA contains several new restrictions that will substantially limit tax-exempt financing for all infrastructure projects, even those financed with traditional "public purpose" bonds, and places especially difficult constraints on projects with any private involvement.

A detailed chart comparing these provisions to current law can be found in Appendix B. A brief summary of each provision follows, and then the remainder of the chapter discusses the implications of these changes on public financing.

Definition of private activity bond: Until the enactment of TRA, if more than 25 percent of the proceeds of a tax-exempt bond were used by a non-governmental entity in a trade or business, and more than 25 percent of the interest payments on the bond were derived from or secured by a private trade or business, it was classified as an industrial development bond (IDB) rather than a governmental bond. As such, it was subjected to numerous restrictions, including a state-by-state volume cap, restrictions on the spending of proceeds, reporting requirements, and arbitrage rebate requirements.

The 25 percent threshold has been lowered to 10 percent under TRA. Bonds exceeding the 10 percent threshold are classified as "private activity" bonds; and an indirect as well as a direct security interest is counted against the limit. This means that payments by a private person relating to a bond financed facility may be counted against the limit even if they are not formally pledged as security or directly used to pay debt service on the bonds.

For example, if a governmentally owned facility is leased to a non-governmental user and receipts from a special user tax are pledged as security for the bonds issued to finance the facility, the lease payments from the private user will count against the security interest limit even though the user tax revenues, rather than the lease payments, are the direct source for repayment of the bonds.

Furthermore, of the 10 percent private use, no more than 5 percent may be for a purpose that is unrelated to a governmental use being financed with the bonds. For example, if $20 million is issued for a new school building and $1.9 million of the proceeds is used for a privately operated cafeteria for employees in another government building, the bond will be taxable. If less than $1 million is used for the cafeteria, or if it is located in the school being financed with the issue, the bond will be tax-exempt.

Eligibility for tax-exempt IDBs: If a bond fails the private use and security interest tests and is classified as an IDB--or under the new terminology, a "private activity bond"--it will not be tax-exempt, unless it falls under one of several specified exceptions to the general rule. Under both TRA and the old law, sewage treatment plants, solid waste disposal facilities, water supply facilities, airports, docks and wharves, mass transit facilities, and district heating and cooling facilities are among the infrastructure facilities eligible for tax-exempt IDBs. In addition, hazardous waste disposal facilities, if they entomb or incinerate wastes, may now be financed with IDBs; and tax increment financing may be done under a new category, qualified redevelopment bonds.

Under TRA, airports, docks and wharves, and mass commuting facilities must now be governmentally owned in order to qualify for IDB financing. Under prior law and TRA, if a water supply facility is privately managed, the rates must be governmentally set or regulated.

Spending of proceeds: Under TRA, at least 95 percent of the proceeds of any private activity bond, except certain private loan bonds (as opposed to 90 percent for IDBs before TRA), must be used for the bond's exempt purpose. An important change made by TRA is that aggregate costs of issuance may not exceed 2 percent and do not count towards the 95 percent requirement.

Volume cap: Perhaps the most severe limit on the use of tax-exempt financing for infrastructure will be the volume cap. Before TRA total annual state and local borrowing as limited by the Deficit Reduction Act of 1984 could not exceed the greater of $150 per state resident or $200 million. The volume cap did not cover the various housing bonds, although some had a separate cap, nor governmentally owned airports, docks and wharves, and mass commuting facilities.

Under TRA, the cap is the greater of $75 per resident or $250 million in 1987 and will decrease to $50 or $150 million in 1988 (this is due to the scheduled expiration of the tax exemption for mortgage revenue bonds and small-issue manufacturing IDBs). All private purpose bonds will be subject to the cap, except those for governmentally owned airports, docks and wharves; governmentally owned solid waste disposal facilities; bonds for 501(c)(3) organizations (however, these organizations may not have more than $150 million in non-hospital bonds outstanding); and veterans' mortgage bonds. Furthermore, the private portion of any governmental bond that exceeds $15 million (up to the permitted 10 percent) is also included in the cap.

Arbitrage: Under both prior law and TRA, proceeds of any tax-exempt bond may not be invested in securities with a materially higher yield, except for a temporary period of up to three years prior to use for the purpose of the issue and for investments not exceeding a minor portion of proceeds (much of which will be for a reasonably required reserve fund). TRA expands the restriction to investments in annuity contracts and other property held for investments; shortens the temporary period for certain pooled financings; and lowers the minor portion limit from 15 percent of proceeds to the lesser of 5 percent of proceeds or $100,000 (reserve fund is limited to 10 percent of proceeds).

In addition, costs of issuance may no longer be deducted in determining bond yield. Bond insurance premiums and other credit enhancement fees are treated as interest rather than issuance costs to the extent they represent a charge for the transfer of risk.

Perhaps the most important new restriction on arbitrage is that all tax-exempt bonds (except certain private loan bonds) are now treated under the same rules as IDB issues with respect to requiring arbitrage proceeds to be rebated to the federal government. Failure to rebate as required will result in retroactive loss of tax exemption for the bond. A safe harbor is provided for determining when proceeds of tax and revenue anticipation notes have been expended for arbitrage purposes: the cumulative cash flow deficit at the end of six months must equal 90 percent of the issue size.

An exception to the rebate requirement is provided for bonds to finance governmental activities if they are not expected to exceed $5 million, and the Treasury Department is allowed to waive the retroactive loss of tax exemption for governmental and 501(c)(3) bonds if the violation is not due to willful neglect and a penalty is paid.

Advance refunding: Advance refunding is another method by which local governments have reduced their borrowing costs in the past. It allows issuers to take advantage of decreases in interest rates since the date of issue, or to free themselves from restrictions contained in the original issue. While advance refunding has never been allowed for IDBs, it has been available on an unlimited basis for governmental bonds.

Under TRA, governmental bonds may still be advance refunded, but only once and numerous restrictions are placed on such refundings. In addition, the definition of what constitutes an advance refunding is made more strict (refunding of a bond more than 90 days before its redemption, rather than 180 days), further constricting both governmental bonds and IDBs.

Disincentives to invest: As discussed earlier in this chapter, TRA reduces the incentives for investment in tax-exempt bonds by including interest from private activity bonds in the minimum tax, disallowing deduction by banks of interest expenses allocable to purchasing or carrying tax-exempt bonds, and reducing property and casualty companies' loss reserve deductions by 15 percent of tax-exempt income. As a result, issuers may have to offer higher interest rates in order to attract these investors, who are an important part of the tax-exempt bond market.

Implications of Tax Reform For Public Financing

The effect of these new restrictions on state and local debt financing will be serious. The new volume cap alone will sharply reduce issuances not only of "private activity bonds" covered by the cap, but also of governmental bonds with a private component and of advance refunding bonds. Other provisions will also take their toll.

The 10 percent rule: The new 10 percent test for classifying bonds as "private activity" will make financing more difficult for facilities which have traditionally had some private or commercial component in their use or financing. Under the 10 percent private use rule, a municipally owned sewage treatment plant could easily exceed the threshold if more than 10 percent of its treatment capacity, in the aggregate, was taken up by one or more large commercial or industrial users whose access to the facility was different from that of the general public.[6]

Many municipalities provide waste treatment services to such users under take-or-pay contracts whereby the user pays a pre-negotiated rate based on the amount of system capacity use and pollutant loadings, which differs from the sewage rate assessed to the general public. Thus, if the 10 percent private security interest threshold were also crossed--something that will occur much more easily now that an indirect interest is counted--bonds for the facility would be taxable unless they could fit under the state's IDB volume cap.

Volume cap: The combination of a greatly lowered volume cap and an increase in the types of projects competing for the newly limited volume will make it extremely difficult for many infrastructure projects to obtain tax-exempt financing. The Public Securities Association[7] has estimated that the volume of private activity bond issues in categories that continue to be eligible under TRA was $30.452 billion in 1984,[8] and that under the $50 cap this volume will be reduced to $13.574 billion by 1988. These figures do not cover the approximately $10 billion in bond use in 1984 in categories that TRA has repealed outright (Table 2).

Thus, for projects which may still receive tax-exempt financing, there will be a 56 percent decrease nationwide in the amount of such financing available in 1988. The picture in individual states is far worse. Some states will lose as much as three quarters of their previous bond volume. When the private portion of governmental bonds is taken into account, the total decrease in the amount of financing available in 1988 increases to 60 percent, assuming that a total of 5 percent of governmental bonds are used in part for "private" purposes and therefore included in the volume cap.

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[6] According to EPA figures, non-public use of municipal sewage treatment systems averages about 16%.

[7] The Public Securities Association is a national association of banks, dealers and brokers that underwrite, trade and sell municipal securities. Despite the bias that this might imply, they have tended to provide the most reliable and up-to-date statistics available.

[8] While figures for 1985 are available, volume for that year is considered by analysts to be abnormally high due to the rush to issue bonds before the January 1, 1986 effective date imposed by the House version of TRA.

TABLE NO. 2:

Approximate Private Activity Bond Per State Under Conference Bill*

STATE	1984 BOND ISSUANCE	$75 1987 CAP	VOLUME LOST - 1987	POST-1987 $50 CAP	VOLUME LOST - 1988
AL	$ 383	$ 299	22%	$ 200	48%
AK	879	250	72%	150	83%
AZ	360	250	31%	153	58%
AR	155	250	NA	150	3%
CA	4,189	1,922	54%	1,281	69%
CO	526	250	52%	159	70%
CT	442	250	43%	158	64%
DE	417	250	40%	150	69%
FL	1,617	823	49%	549	66%
GA	699	438	37%	292	58%
HI	111	250	NA	150	NA
ID	102	250	NA	150	NA
IL	1,011	863	15%	576	43%
IN	391	412	NA	275	30%
IA	358	250	30%	150	58%
KS	300	250	17%	150	50%
KY	357	279	22%	186	48%
LA	714	395	53%	223	69%
ME	138	250	NA	150	NA
MD	967	326	66%	218	77%
MA	695	435	37%	290	58%
MI	531	681	NA	454	15%
MN	1,018	312	69%	208	80%
MS	266	250	6%	150	44%
MO	611	376	39%	250	75%
MT	178	250	NA	150	16%
NE	354	250	29%	150	58%
NV	288	250	13%	150	48%
NH	122	250	NA	150	NA
NJ	898	564	37%	376	58%
NM	148	250	NA	150	NA
NY	1,433	1,330	7%	689	38%
NC	317	462	NA	308	3%
ND	213	250	NA	150	30%
OH	756	806	NA	538	29%
OK	359	250	30%	165	54%
OR	207	250	NA	150	28%
PA	1,367	893	35%	595	56%
RI	262	250	5%	150	43%
SC	247	250	NA	165	33%
SD	270	250	7%	150	44%
TN	704	354	50%	235	66%
TX	2,275	1,199	47%	800	65%
UT	327	250	24%	150	54%
VT	88	250	NA	150	NA
VA	1,303	423	68%	282	78%
WA	386	323	16%	215	44%
WV	241	250	NA	150	38%
WI	372	358	4%	238	36%
WY	108	250	NA	150	NA
TOTAL	$30,452	$20,962	36%	$13,574	56%

* Source: Public Securities Association. All figures in millions. Table does not include in 1984 volume approximately $10 billion of bond use repealed by the bill.

If typical municipal wastewater treatment plants are taken as examples, we can get some idea of the potential impact of the cap. The cost of constructing a wastewater treatment plant will vary according to its planned capacity, and the size of the bond issue required to finance that cost will also vary (on average it is about 25 percent to 30 percent above the construction cost). Municipalities with populations of 20,000, 50,000, and 100,000 can be used as examples to provide an idea of the range of possible costs.

A wastewater treatment plant serving a municipality with a population of 20,000 and with a capacity of 2 mgd (million gallons per day) would cost about $5.5 million and require a bond issue of $7.5 million. A municipality with a population of 50,000 would require a 5 mgd capacity, costing $12.5 million to build and requiring a $16.5 million bond issue. A city of 100,000 would require a 10 mgd capacity, costing $18.5 million to build and requiring a $23 million bond issue.

For some states, this will create significant problems. The Public Securities Association estimates that twenty-two states, almost half, will be at the minimum volume allotment of $150 million in 1988. For these states, even a small 2 mgd plant would require 5 percent of their volume allotment, while a 5 mgd plant would use up 11 percent. A state with the minimum volume and the need for a large plant requiring a $23 million issue will find 15.3 percent of its volume allotment taken up by a single project.

Another eleven states will have volume allotments of $230 million or less and thus need at least 10 percent of their allotment to finance a $23 million sewage treatment system for a single municipality. When it is considered that a state may need more than one wastewater treatment plant, and have other important projects competing for volume as well, this volume cap will inevitably create severe hardships.

Another study by PSA[9] projects the effects of the volume cap to 1991. The study reports that 41 percent of all the tax-exempt bonds issued in 1984 and 63 percent of all "private activity" bonds could not be issued as tax-exempt securities in 1991 under TRA. Unlike the first study, the estimated reduction in this study takes into account both volume that would exceed state caps and uses that have lost their tax exemption. It does not, however, take into account various other new restrictions which will also reduce issuances. According to PSA, some states will be especially impacted under the 1991 scenario. Wyoming could not issue any of its 1984 "private activity" bonds and 70 percent

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[9] Public Securities Association, The Impact of Provisions on Tax-Exempt Bonds in the Tax Reform Bill: A Statistical Analysis Regarding Volume and Increased Borrowing Costs, October 2, 1986.

TABLE NO. 3:

EFFECT OF TAX BILL ON TAX-EXEMPT "PRIVATE ACTIVITY" BONDS

STATE	(1) 1984 VOLUME OF "PRIVATE ACTIVITY" BONDS (MILLIONS)	(2) TAX-EXEMPT "PRIVATE ACTIVITY" BONDS PERMITTED TO BE ISSUED UNDER CAP IN 1991 (MILLIONS)	(3) TAX-EXEMPT "PRIVATE ACTIVITY" BONDS NOT SUBJECT TO IDB VOLUME CAP IN 1991 (MILLIONS)	(4) VOLUME OF 1984 TAX-EXEMPT "PRIVATE ACTIVITY" BONDS NOT ALLOWED IN 1991 (MILLIONS)
ALABAMA	$1,247.0	$199.5	$204.5	$843.0
ALASKA	958.0	150.0	27.0	781.0
ARIZONA	1,496.0	152.7	640.0	703.3
ARKANSAS	596.0	150.0	63.0	383.0
CALIFORNIA	6,462.5	1,281.1	1,300.0	3,881.4
COLORADO	1,102.0	158.9	257.0	686.1
CONNECTICUT	766.0	157.7	104.5	503.8
DELAWARE	800.0	150.0	0.0	650.0
FLORIDA	4,541.0	548.8	1,000.0	2,992.2
GEORGIA	2,872.4	291.0	283.0	2,298.4
HAWAII	390.0	150.0	140.0	100.0
IDAHO	239.0	150.0	0.0	89.0
ILLINOIS	3,028.3	575.6	1,363.0	1,074.0
INDIANA	1,424.2	274.7	411.5	738.0
IOWA	616.0	150.0	4.0	462.0
KANSAS	900.0	150.0	66.0	684.0
KENTUCKY	1,030.0	186.2	306.5	537.3
LOUISIANA	1,837.0	223.1	335.0	1,278.9
MAINE	317.0	150.0	0.0	167.0
MARYLAND	1,535.0	217.5	226.0	1,091.5
MASSACHUSETTS	1,844.4	289.9	611.0	943.5
MICHIGAN	1,601.4	453.0	481.0	667.4
MINNESOTA	1,700.0	208.1	170.0	1,321.9
MISSISSIPPI	745.4	150.0	110.5	484.9
MISSOURI	1,624.5	250.4	428.5	945.6
MONTANA	400.0	150.0	32.5	217.5
NEBRASKA	580.0	150.0	177.0	253.0
NEVADA	424.0	150.0	0.0	274.0
NEW HAMPSHIRE	325.0	150.0	32.5	142.5
NEW JERSEY	2,610.0	375.8	403.5	1,830.7
NEW MEXICO	547.3	150.0	76.0	321.3
NEW YORK	6,142.0	888.8	1,433.0	3,820.2
N. CAROLINA	840.0	308.3	63.7	468.0
N. DAKOTA	580.0	150.0	38.5	391.5
OHIO	1,888.9	537.6	321.0	1,030.3
OKLAHOMA	550.7	164.9	70.0	315.8
OREGON	551.0	150.0	169.5	231.5
PENNSYLVANIA	4,132.0	595.1	1,110.0	2,426.9
RHODE ISLAND	611.0	150.0	208.0	253.0
S. CAROLINA	903.0	165.0	103.5	634.5
S. DAKOTA	414.0	150.0	23.0	241.0
TENNESSEE	1,420.1	235.9	300.0	884.2
TEXAS	5,818.0	789.5	2,000.0	3,028.5
UTAH	812.0	150.0	45.0	617.0
VERMONT	311.0	150.0	33.0	128.0
VIRGINIA	2,278.2	281.8	314.0	1,682.4
WASHINGTON	653.0	215.1	180.0	257.9
W. VIRGINIA	387.0	150.0	61.0	176.0
WISCONSIN	735.0	238.3	153.0	343.7
WYOMING	480.0	150.0	0.0	330.0
TOTAL	$70,289.1	$13,573.6	$17,108.5	$39,607.0

SOURCE: PUBLIC SECURITIES ASSOCIATION

TABLE NO. 4:

State Report (By Region)
Showing Loss of Tax-Exempt
Volume

	Percentage of 1984 Volume of "Private Activity" Bonds That Could Not Be Issued In 1991	Percentage of 1984 Volume of All Tax-Exempt Bonds That Could Not Be Issued in 1991		Percentage of 1984 Volume of "Private Activity" Bonds That Could Not Be Issued In 1991	Percentage of 1984 Volume of All Tax-Exempt Bonds That Could Not Be Issued in 1991
South			New England		
Alabama	66.1%	46.0%	Connecticut	72.8%	36.5%
Florida	51.2%	31.7%	Maine	91.8%	67.9%
Georgia	80.3%	72.3%	Massachusetts	50.3%	26.6%
Kentucky	62.9%	40.5%	New Hampshire	74.0%	69.5%
Louisiana	71.1%	48.4%	Rhode Island	41.4%	27.1%
Mississippi	70.3%	64.5%	Vermont	78.1%	45.7%
North Carolina	83.1%	49.7%		68.1%	45.6%
South Carolina	66.8%	38.4%			
Tennessee	57.3%	46.9%			
Virginia	73.8%	61.7%			
	68.3%	49.8%			
Mid-Atlantic			Industrial Midwest		
Delaware	96.2%	71.9%	Illinois	43.5%	31.0%
Maryland	71.1%	48.7%	Indiana	65.4%	54.7%
New Jersey	72.3%	42.3%	Michigan	51.8%	32.2%
New York	54.5%	27.2%	Ohio	74.5%	55.2%
Pennsylvania	58.9%	42.3%	Wisconsin	74.9%	34.9%
West Virginia	76.3%	59.8%		62.0%	41.6%
	71.5%	48.7%			
Plains			Southwest		
Iowa	83.9%	60.2%	Arizona	53.6%	33.1%
Kansas	78.7%	48.4%	Arkansas	68.2%	51.8%
Minnesota	77.3%	47.1%	New Mexico	69.4%	33.4%
Missouri	58.2%	46.4%	Oklahoma	57.3%	24.2%
Nebraska	60.4%	53.6%	Texas	52.4%	25.5%
North Dakota	68.0%	51.6%		60.2%	33.6%
South Dakota	77.0%	63.3%			
	71.9%	52.9%			
Pacific			Rockies		
California	59.1%	28.7%	Colorado	62.2%	28.5%
Alaska	96.9%	49.4%	Idaho	64.3%	41.5%
Hawaii	38.6%	19.8%	Montana	71.7%	57.7%
Oregon	51.2%	20.2%	Nevada	66.8%	47.2%
Washington	44.3%	17.9%	Utah	80.9%	29.0%
	58.0%	27.2%	Wyoming	100.0%	70.1%
				74.3%	45.7%

SOURCE: PUBLIC SECURITIES ASSOCIATION

of all its municipal bonds. Thirty other states would also experience "private activity" volume losses exceeding the national average of 63 percent.

Table 3, taken from the PSA study, shows the loss of private activity volume in 1991 for each state. Table 4, taken from the same study, shows the percentage of 1984 private activity volume and overall tax-exempt bond volume that will be lost by each state by 1991. The states are grouped according to regions, showing that the bill will have a disparate effect not only among states but among regions. While every region will be seriously impacted, the Plains states fare the worst, losing 71.0 percent of private activity volume and 52.9 percent of all tax-exempt volume.

Arbitrage and advance refunding: The loss to local governments of their ability to reduce borrowing costs by using arbitrage proceeds will make the financing of infrastructure projects more expensive. In addition, compliance with these and other new rules will make bond issuance more difficult and burdensome for local governments. A witness at the Panel's Albuquerque hearing reflected on this problem, and while it was addressed to the impact of the House version of TRA, his observations are also applicable to the bill as finally enacted:

> "The authors of tax legislation and Treasury Department officials have often indicated that a primary goal of theirs is to reduce the amount of tax-exempt debt that is issued annually. The proposed restrictions on arbitrage earnings accomplish exactly the opposite by removing the potential arbitrage earnings from investing bond proceeds from the equation that determines the amount of bonds necessary to complete the project. Who benefits from this restriction? Any gain to the U.S. Treasury would have to assume that most if not all of the investment dollars that would not be required in a smaller issue (because of arbitrage earnings) would be invested in a taxable security. Is this a reasonable assumption?... The issuer incurs a larger debt and greater annual debt service requirements. The taxpayer or utility customer pays a greater amount in taxes or utility rates. The total amount of tax-exempt debt outstanding is increased, which is the reverse of the original intention."[10]

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[10] Testimony of Tom B. Ratcliff, Senior Vice President, Boettcher & Company, Inc., before the Private Sector Advisory Panel on Infrastructure Financing, Albuquerque, New Mexico, April 4, 1986, pp. 5-6.

TABLE NO. 5:
PROJECTED ADDITIONAL INTEREST COST BY 1991

STATE	(1) TOTAL ADDITIONAL INTEREST COST OF MINIMUM TAX BY 1991 (MILLIONS)	(2) TOTAL ADDITIONAL INTEREST COST OF BONDS IN EXCESS OF CAP BY 1991 (MILLIONS)	(3) TOTAL ADDITIONAL INTEREST COST OF RE-AUTHORIZED BONDS BY 1991 (MILLIONS)	(4) PROJECTED ADDITIONAL INTEREST COST BY 1991 (MILLIONS)
ALABAMA	$10.8	[illegible]	[illegible]	[illegible]
ALASKA	18.8	284.0	180.6	270.7
ARIZONA	20.0	100.9	181.0	207.0
ARKANSAS	17.0	4.0	86.8	86.8
CALIFORNIA	184.8	1,[illegible]	677.8	1,016.8
COLORADO	16.4	117.0	146.8	270.7
CONNECTICUT	18.7	61.0	106.4	216.8
DELAWARE	20.3	76.0	120.8	246.8
FLORIDA	88.7	[illegible]	[illegible]	[illegible]
GEORGIA	45.8	[illegible]	610.8	671.1
HAWAII	18.8	0.0	18.8	87.8
IDAHO	46.0	0.0	14.8	86.8
ILLINOIS	61.8	181.1	261.6	406.8
INDIANA	28.3	86.0	[illegible]	201.8
IOWA	14.1	[illegible]	86.4	186.4
KANSAS	24.0	86.0	161.7	261.0
KENTUCKY	28.0	67.8	148.8	286.0
LOUISIANA	26.9	100.8	[illegible]	621.6
MAINE	18.8	0.0	86.9	86.0
MARYLAND	21.8	200.0	171.1	466.9
MASSACHUSETTS	22.6	180.8	106.0	[illegible]
MICHIGAN	66.7	78.4	100.8	[illegible]
MINNESOTA	20.3	[illegible]	267.9	267.0
MISSISSIPPI	28.0	80.0	100.4	201.4
MISSOURI	24.3	417.0	[illegible]	864.7
MONTANA	18.4	7.0	78.7	[illegible]
NEBRASKA	16.6	69.6	86.1	127.6
NEVADA	16.8	66.8	69.8	101.8
NEW HAMPSHIRE	14.8	0.0	61.4	78.7
NEW JERSEY	60.4	[illegible]	611.1	[illegible]
NEW MEXICO	18.6	0.0	86.1	[illegible]
NEW YORK	84.1	100.7	400.8	744.4
N. CAROLINA	28.7	0.0	174.6	211.0
N. DAKOTA	19.8	10.0	[illegible]	167.0
OHIO	74.3	66.0	207.1	[illegible]
OKLAHOMA	20.8	77.4	66.8	166.0
OREGON	16.0	10.8	67.9	78.1
PENNSYLVANIA	77.0	[illegible]	[illegible]	[illegible]
RHODE ISLAND	21.9	88.0	88.1	161.0
S. CAROLINA	26.8	66.0	100.8	[illegible]
S. DAKOTA	18.6	80.0	88.8	[illegible]
TENNESSEE	21.9	100.0	107.1	[illegible]
TEXAS	88.0	[illegible]	848.8	1,[illegible]
UTAH	17.1	64.0	100.0	841.8
VERMONT	21.8	0.0	86.1	66.4
VIRGINIA	29.1	[illegible]	[illegible]	700.8
WASHINGTON	20.7	64.0	86.4	187.1
W. VIRGINIA	18.6	60.0	68.8	86.8
WISCONSIN	26.0	61.0	109.4	164.8
WYOMING	20.1	0.0	106.8	168.7
TOTAL	$1,781.8	[illegible]	[illegible]	$16,787.8

SOURCE PUBLIC SECURITIES ASSOCIATION

The arbitrage restrictions may also affect investors, who may decline to purchase municipal bonds because they fear a retroactive change in the tax-exempt status of interest income from the bond if the issuer miscalculates cumulative cash flow.

The new advance refunding rules will also serve to drive up the costs of issuing municipal bonds. Issuers will be robbed of much of their ability to refund bond issues to take advantage of lower interest rates, or to free themselves from burdensome restrictions imposed in the original issue. And the changes in incentives for important classes of investors will increase costs by requiring that tax-exempt bonds carry higher interest rates in order to be marketable.

In short, state and local issuers will now have to cope with a host of other factors that will drive up the cost of public borrowing and greatly increase the administrative burden of debt issuance. In addition to the volume cap, these include 1) the need to switch to taxable financing for issues that will no longer qualify as tax-exempt; 2) the higher interest rates that will be required to attract the principal investors in municipal bonds due to the minimum tax, bank deductibility, and property and casualty loss provisions; 3) the elimination of arbitrage as a way of increasing the value of proceeds and thus allowing costs to be met with a smaller issue; 4) the restrictions on payment of issuance costs out of bond proceeds; and 5) the limitations on advance refunding.

All of these factors taken together, according to the Public Securities Association, will increase state and local governments' borrowing costs nationwide by $16.7 billion--$71.00 per capita--by 1991 (see Table 5). Again, the effect varies among the states, ranging from a high of $1.6 billion in increased costs for California to $27.3 million for Arkansas. For every state, however, the increased cost is substantial.

The philosophy behind these restrictions is explained on page III-8. Nevertheless, it is natural to ask what benefit the federal government receives by imposing this financial and administrative burden on state and local governments. The answer, unfortunately, is very little. Although these provisions were advanced mainly as revenue raising measures for the Federal Treasury, their costs far outweigh the estimated benefits in revenue gain.

According to the revenue estimates provided by the Joint Committee on Taxation, the tax-exempt bond provisions of TRA will raise only an estimated $16 million in FY 1987, the first year they are fully in effect, and only $622 million between 1987 and 1991--less than two-tenths of one percent of the total revenues raised by TRA in that period and only 3.7 percent of the increased borrowing costs that will result. While the revenue gains may increase in later years, so will the borrowing costs--PSA estimates that by 1996 the increase in costs will be $67.5 billion.

To reduce state and local governments' ability to use tax-exempt bonded indebtedness by $35 billion[11] and increase their borrowing costs by $16.7 billion over the next five years to raise only $622 million over the same period does not appear to serve any useful public policy objective and seems to present a conflict with the principles of federalism, as stated at the Panel's Albuquerque hearing,

> "The present and proposed tax laws and Treasury regulations have been written with the sole intent to reduce the amount of tax-exempt debt outstanding and eliminate any arbitrage profits for issuers. These laws and regulations appear to have been promulgated without any consideration to the net effect on the federal treasury and the problems it causes local government. The prevailing attitude that revenues belong to Washington and responsibilities belong to local government must be altered if we are going to meet the challenge of financing this nation's infrastructure needs."[12]

Aside from the revenue argument, the other major justification for these provisions was to curtail remaining abuses and ensure that tax-exempt financing is available only for public purposes. The provisions of TRA, however, go far beyond what is necessary to accomplish that end. They make tax-exempt financing difficult or impossible for activities which are clearly public in nature because some measure of private involvement in their provision has led to their designation as "private" activities. Moreover, they affect even those bond issues which all agree are "governmental" in nature--e.g., general obligation bonds for schools, roads, and the like.

It is important to emphasize the serious misconception inherent in the whole "private activity bond" concept. While the distinction between a "public" and "private" purposes is admittedly a difficult one, TRA has done nothing to help clarify the distinction or provide realistic and workable criteria. The 10 percent private use and security interest test is an arbitrary and specious measure for distinguishing the essential public purpose of many facilities.

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[11] The Public Securities Association estimates that tax-exempt bond volume will shrink from $115 billion in 1984 to $80 billion by 1991. Bond volume in 1985 was $218 billion, but this figure is considered to be distorted by the rush to issue before the proposed January 1, 1986 effective date of the House version of TRA.

[12] Ratcliff, op. cit., pp. 9-10. Again, although the statement was made in reference to the House version of TRA, it applies to the final legislation as well.

It is the Panel's view that a facility that serves the general public and is necessary for the public health and well-being is a governmental or public activity no matter how the facility is financed or the service it renders is provided. The involvement of the private sector in purchasing a portion of the services generated by such a facility, or in providing a facility or service, does not change its essentially public nature. The "private activity" bond distinction, however, ignores this essential fact and classifies bonds for activities that not only clearly serve but are absolutely necessary to the general public in the same restrictive manner as those that serve only a limited segment of the population.

Bonds for sewage treatment plants, solid waste disposal facilities, and facilities for furnishing a safe water supply are governmental in nature and should be treated as such, regardless of whether the local government elects to have the private sector participate in furnishing these services, or whether the 10 percent rule is somehow violated by a few large users in a system that is owned by and serves the general public.

Panel Member George V. Voinovich, Mayor of Cleveland, Ohio, spoke for many state and local officials when he said last year,

> "A public facility, whether it is a resource recovery plant, a public road, or a water system, is built for a public purpose. Whether the state or local government seeks to attract private participation in the construction, ownership, operation, or use of such a public facility does not change its public purpose."[13]

During the Panel's hearings in Washington, D.C. and in several states, witness after witness raised the then-pending tax reform bill as a primary concern and a serious threat to local efforts to upgrade infrastructure facilities. While recognizing the need to improve the tax code and eliminate any remaining abuses in the use of tax-exempt bonds, these witnesses urged that Congress consider the state and local needs addressed by tax-exempt financing as well as the burden imposed on the federal treasury.

Mississippi State Treasurer and Panel Member Bill Cole summarized this feeling when he stated at the Washington, D.C. hearing that "the fact that tax-exempt financing does result in certain tax losses to the federal treasury must be viewed in the context of the declared public policy sought to be promoted by the use of tax exempt financing by state and local governments. I would submit that due to the magnitude of the need for infrastructure development and its importance to economic growth that such 'cost' or loss of revenue is mitigated by the fact that it would seem to be a reasonable expenditure of public funds for a declared public purpose."[14]

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[13] Testimony of George V. Voinovich, Mayor of Cleveland, Ohio, before the Private Sector Advisory Panel on Infrastructure Financing, Washington D.C., January 22, 1986, p. 12.

Richard Dewling, Commissioner of the New Jersey Department of Environmental Protection, pointed out that "although it is touted as being revenue-neutral, the bill represents a tax shift from the federal level to the state and local level. Worse, it introduces tremendous new complexity, and therefore uncertainty, in public financings. The result will be higher interest rates for tax-exempt issues. This will not enrich the federal treasury, but will be a drain on state and local budgets."[15]

Conclusion

With the enactment of the Tax Reform Act of 1986, the federal tax code imposes serious constraints on state and local governments' capacity to finance infrastructure. The provisions of the new tax law that make it easier for a bond to be classified as "private activity," lower the volume cap and broaden its coverage, severely restrict arbitrage and advance refunding, and reduce the appeal of tax-exempt bonds to investors will make traditional forms of financing more difficult and costly, and in some cases will render them impossible.

The panel feels that the essentially public nature of bonds issued to finance infrastructure should be recognized, and that local governments should be able to finance their public works without being subject to the constraints applied to "private activities." This can best be done by amending the tax code to ensure that bonds for public infrastructure facilities will be treated as governmental rather than private activity bonds, regardless of the level of private involvement in the financing or operation of such facilities.

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[14] Testimony of Bill Cole, State Treasurer of Mississippi and President of the National Association of State Treasurers, before the Private Sector Advisory Panel on Infrastructure Financing, Washington, D.C., January 22, 1986, p. 8.

[15] Testimony of Richard T. Dewling, Ph.D, P.E., Commissioner, New Jersey Department of Environmental Protection before the Private Sector Advisory Panel on Infrastructure Financing, Trenton, N.J., April 7, 1986, p. 6.

IV. PUBLIC-PRIVATE PARTNERSHIPS

An option for financing public facilities that has received increasing attention in the past few years is the use of public-private partnerships to provide public services. Commonly referred to as "privatization," it entails the involvement of private sector providers in the development, delivery, operation or management of a public facility or service.

While there are some public services in which there has always been a substantial amount of privatization, private bus services being one example, in recent years the combination of growing infrastructure needs, diminishing federal funding, and changes in the tax law made in 1981 has spurred privatization in new areas. Most notable among these are solid waste/resource recovery systems, which have paved the way for the privatization of environmental infrastructure, and wastewater treatment, where the movement towards public-private partnerships is just beginning. Additionally, there are numerous examples of private developers providing the financing, or in some cases actual facilities, in return for local zoning and development approvals.

It is important to stress that for the purpose of this discussion, the term "privatization" does not encompass proposals for the wholesale selling of public assets and resources or the total transfer of public responsibility for certain functions to the private sector. While there is current discussion of selling off public assets such as the Tennessee Valley Authority, that is not the subject of this discussion on private investment in public facilities. Rather, the Panel examined public-private partnerships in which local governments and the private sector work together to obtain the most efficient and cost-effective delivery of public services, but with the public sector retaining overall control.

STRUCTURE OF PUBLIC-PRIVATE PARTNERSHIPS

There are many ways in which a public-private partnership may be structured, including:

1) the simple granting of a license or franchise to a private service provider;

2) a management contract or service agreement under which a private firm operates a publicly owned facility;

3) the sale to a private vendor of an existing facility with the local government retaining control over the provision of services through a service contract; and

4) a full service agreement under which the private partner designs, constructs, operates, maintains, and often owns the facility in question.

Because of the cost savings to the local government and the tax benefits to the service provider that can be realized through the last type of arrangement, it has become increasingly common in such areas as solid waste/resource recovery and wastewater treatment. However, the recent changes in the tax code made by the Tax Reform Act of 1986 have made private ownership a less attractive option, and future privatization agreements may therefore be structured differently.

A full service agreement is usually structured in one of three ways, all of which usually involve the use of tax-exempt financing (although it is possible to use taxable debt, and some projects have combined taxable and tax-exempt debt) along with some level of private equity contribution. In the first, the vendor owns and usually designs and constructs the facility, and provides the service to the local government in return for a service fee. The vendor is responsible for all debt service, and the property is sometimes completely debt financed. This approach may result in more debt liability than is desirable for the private vendor.

Another approach is a limited partnership, in which the vendor is the general partner. The equity investment of the limited partners reduces the amount of debt financing necessary, while spreading both the risks and the tax benefits associated with ownership.

A third way of structuring a full service agreement is a leveraged lease. In this case, a third party, typically a bank or financial institution, purchases the facility with a mixture of debt and equity, and then leases it to the vendor. The third party has now assumed the risks and benefits of ownership. The vendor in turn enters a service agreement with the local government; the service fees are used as lease payments, which in turn are used by the third party to retire its debt.

AREAS OF OPPORTUNITY FOR PUBLIC-PRIVATE PARTNERSHIPS

All of the public works and public services that are within the scope of this report are potential areas for public-private partnerships. In some areas such partnerships have been operating for many years. Each area of infrastructure differs in the amount of privatization that has already occurred, the potential for further development of public-private partnerships in the near future, and the form that these partnerships have taken and are expected to take.

Solid Waste Disposal/Resource Recovery

Private involvement in solid waste collection has been common for some time. Seven out of ten cities in the United States use private waste collection contractors, accounting for nearly 80% of solid waste collected in this country.[1] Several studies conducted over the past few years have indicated that private waste collection is more cost-effective than municipally provided service.

For instance, in 1984 a study funded by the Department of Housing and Urban Development and performed by Ecodata, Inc. examined eight local government services, including solid waste collection, in ten California cities. The study compared municipally provided with privately provided services for such factors as cost, output, level of service provided, quality of service, management practices, and the technology employed. For solid waste collection the study found that private service was between 28 percent and 42 percent less costly than municipal collection, while the quality of service was almost identical.[2] Earlier studies conducted by Columbia University in New York and Victoria University in British Columbia also found significant cost savings in private waste collection.[3]

Given this background of privately furnished solid waste collection, it is not surprising that the trend towards privatization has been led by solid waste disposal/resource recovery systems. The emergence of this area in the privatization market is a result of a number of factors in addition to the established precedent. They include 1) the potential of these systems for earning revenue through the sale of "cogenerated" electric energy; 2) private ownership and expertise in technologies for resource recovery; 3) the increasing cost and problems associated with solid waste disposal due to landfill siting shortages and environmental requirements; 4) lack of federal funding; and 5) the favorable treatment of this type of investment in the tax-exempt bond and depreciation provisions of the tax code prior to tax reform.

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[1] Richard L. Hanneman, "Privatization of Waste Services: Collection, Disposal & Resource Recovery" in Privatization Opportunities, Proceedings of the First National Conference on Privatization Opportunities, The Privatization Council, Inc., June 1986, ch. XII, p. 1.

[2] Barbara J. Stevens, ed., Delivering Municipal Services Efficiently: A Comparison of Municipal and Private Service Delivery, technical report prepared by Ecodata, Inc., for the U.S. Department of Housing and Urban Development , June 1984.

[3] Hanneman, op. cit., pp. 2-3.

Resource recovery facilities typically are constructed and operated through full service agreements in which the private partner is responsible for construction, operation and performance of the facility and contracts with the government entity to handle and dispose of specific amounts of waste. The municipality retains control over the quality of the service and the payment of fees, but the private vendor assumes much of the risk and responsibility accompanying the construction and operation of the facility. It is quite common for the service vendor of this type of facility to turn the construction phase over to an engineering firm under a "turnkey" contract as a way of dealing with the risks associated with this phase.[4] Under a turnkey contract, the engineering firm builds the facility according to the specifications of the ultimate owner (either a private service vendor or a municipality) and then sells it to that owner upon completion.

The factors that have led to the privatization of solid waste collection and disposal continue to be effective and should be for some time to come. Solid waste facilities fared far better than other types of private investment in infrastructure in the Tax Reform Act of 1986. Thus, there is good indication that the trend towards privatization in solid waste management/cogeneration will continue into the foreseeable future.

Wastewater Treatment

The trend towards privatization of wastewater treatment facilities is a recent phenomenon, largely attributable to the combination of strict federal standards for wastewater treatment and limited availability of federal assistance for the construction or upgrading of wastewater treatment facilities. Communities turning to public-private partnerships are typically those which find themselves with no reasonable expectation of federal grant assistance. They may either be planning facilities that are not grant eligible or, as is more often the case, be so far down on the state's list of priority projects that there is no possibility of the limited grant money reaching them. The provisions phasing out federal wastewater construction grants that is part of the recent Clean Water Act reauthorization[5] will make public-private partnerships an increasingly attractive option for many of these communities.

Privatization of wastewater treatment tends to be structured through a full service agreement. Wastewater treatment facilities are likely to be easier to privatize than resource recovery facilities, because

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[4] Roger D. Feldman, "Lessons Learned From Resource Recovery: Introduction to Privatization," Privatization Review, Vol. 1, No. 1 (Summer 1985), pp. 12-13.

[5] Public Law 100-4.

1) facility siting for wastewater treatment is not as controversial as for resource recovery facilities (often involving only the expansion or modification of an existing site);

2) financing is easier because the perceived technology risk is less and the revenue stream (which is based on user fees with no reliance on energy sales) is more secure; and

3) wastewater treatment is almost always a monopoly public utility in the service area, while solid waste collection may have competing services in the same area.[6]

The future prospects for the privatization of wastewater treatment have been clouded by enactment of the Tax Reform Act of 1986 (TRA). By repealing the investment tax credit, substantially lengthening the depreciation period for wastewater treatment facilities and making tax-exempt financing far more difficult to obtain, TRA has changed many of the tax provisions around which public-private partnerships have heretofore been structured (see discussion at pp. IV-29 to IV-36).

On the other hand, the need for private sector involvement can only grow as federal assistance for wastewater treatment begins to phase out. To the extent that the privatization of wastewater facilities continues, it will probably be undertaken in forms that are less dependent on tax benefits to the investor--for example, financing may be done with taxable bonds rather than tax-exempt industrial development bonds (IDBs) (see discussion of debt financing in Chapter III).

Water Supply

Many of the factors impelling the privatization of wastewater treatment also operate in the case of water supply. There has always been some degree of privatization in the water supply system; some 30,000 municipal water supply systems are privately owned. Moreover, there is a growing need for improved systems of treating and distributing water that will meet new federal environmental standards, and very little public money is available for the purpose. As described in Chapter I, federal assistance for water supply is for the most part available only in rural and economically disadvantaged areas. Water supply systems would therefore appear to be good candidates for privatizing entrepreneurs.

Unfortunately, the Tax Reform Act creates a dismal picture for private investment in water supply facilities by lengthening the depreciation period for such facilities from five years to twenty. If the facility is financed with tax-exempt IDBs, the depreciation period is fifty years. As a consequence, new private capital investment in public water supply systems seems highly unlikely, although private management and operation of publicly owned facilities may still be a viable option.

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[6] Harvey Goldman and Sandra Mokuvos, The Privatization Book (Arthur Young & Company: 1984), pp. 52-53.

It is unlikely that there was any conscious intent on the part of the members of the tax writing committees to preclude public-private partnerships for either wastewater treatment or water supply. Neither the need for private investment in this area nor the degree to which changes in the tax laws would affect such investment were adequately considered by these committees before they approved provisions that will have that unintended result.

Roads and Highways

Public-private partnerships tend to take a somewhat different form in the area of both road and highway transportation and mass transit. Usually they consist of private sector contributions, either compulsory or voluntary, to the financing of transportation facilities, including roads and associated expenditures such as sidewalks and lights. They have been developed primarily by local governments in conjunction with state departments of transportation.

These partnerships may take several forms:

1) voluntary private donation of capital, real property or services;

2) developer financing, in which the private developer provides capital for transportation improvements in return for land, facilities, or traffic control measures (such cost sharing may be mandatory and take the form of impact fees);

3) negotiated investments, in which the developer contributes resources to a transportation project in exchange for zoning changes, special building permits, and so forth.[7]

Compulsory contributions through impact fees or special assessments are based on the premise that the private party benefiting from the development of an area should assume some of the burden of dealing with the consequences of development such as increased traffic flow. While such contributions are one form of private involvement in infrastructure financing, their involuntary nature, as well as the lack of private ownership or control of the resulting facilities, separates them from the arrangements that can truly be called public-private partnerships or privatization. See pp. IV-9 to IV-11 for further discussion of this form of private contribution.

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[7] C. Michael Walton, Mark A. Euritt, and Reginald R. Souleyrette II, Private Participation in Financing Highway Projects and Providing Property for Highway Improvements, paper presented at National Conference on Highway Finance of the American Association of State Highway and Transportation Officials, August 16-19, 1986.

In Colorado, local governments in the Denver area recently joined with developers and landowners to plan and finance the construction of a $722 million, 50-mile beltway around the city. The plan was devised after state support was denied. Developers contributed money for planning, economic impact analysis, and other expenses; Arapahoe County issued tax-exempt revenue bonds; and landowners contributed much of the required right-of-way. A regional authority with a three-member staff was created, and most of the work on the project will be contracted out.[8]

At the Panel's regional hearing in Albuquerque, Charles L. Miller, the Director of the Arizona Department of Transportation, stated that the state had adopted a policy of joint sponsorship of certain highway projects as part of its 1984 transportation program in response to growing demand, increased construction costs, and declining user revenues. On freeway interchange and grade separation projects not planned by the state, for example, the state will assume only 50 percent of the cost.[9]

Texas has developed transportation corporations, in which private property owners form nonprofit organizations to accept property and money to support highway developments.[10] Other privatization arrangements include sale or lease of undeveloped land, subsurface rights, or air rights surrounding transportation facilities; private ownership of transportation facilities (e.g., privately owned toll roads); and land banking--the purchase of land for future use.[11]

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[8] "Local Governments Use Innovative Plan to Finance Highway Without State or Federal Help," Infrastructure News, September 5, 1986, pp. 2-3.

[9] Testimony of Charles L. Miller, Director, Arizona State Department of Transportation before the Advisory Panel, April 4, 1986.

[10] Walton, Euritt, and Souleyrette, op. cit., pp. 9-11.

[11] Ibid., pp. 12-15.

Arrangements such as those described above are becoming increasingly common as local governments struggle to meet the infrastructure needs generated by rapid growth. The major problem with this approach is that it is only viable in the economic growth areas. Often the greatest need for private funding for infrastructure is in economically distressed areas, but it is in economically prosperous regions that the private resources are available and that the majority of such arrangements occur.

Mass Transit

For many years, private sector provision of public transit services was the rule rather than the exception. The period 1960-1975, however, saw an almost complete reversal of this situation.[12] Not until recently was the concept of private transit facilities revived, spurred primarily by Administration interest in privatizing public services.

The Urban Mass Transportation Administration in the U.S. Department of Transportation established an Office of Private Sector Initiatives in 1984. UMTA Administrator Ralph Stanley charged the office with "fostering the acceptance of the concept [of privatization] while coordinating implementation." Of great importance, according to Stanley, are the office's activities to encourage local planning organizations to explore private sector alternatives that have not been attempted, using UMTA grant money. Also important is the idea of letting competition rather than federal subsidies play the essential role in developing mass transportation.[13]

Tampa, Florida is one example of a city benefitting from private involvement in mass transit. Rather than pursue federal funding for a people mover system, the Hillsborough Area Regional Transit System (HART) entered into an agreement with a private developer for the construction of a people mover system which would connect Harbor Island (the development) with the city. HART secured a 0.7 mile right-of-way. In return, the developer agreed to finance the entire $7.5 million system, maintain and operate it for a 15 year period and, at the end of that period, turn the system over to HART for $1.00. The system opened in mid-1985 in conjunction with the opening of the first stage of the development.

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[12] "The Effect of Government Ownership and Subsidy on Performance: Evidence From the Bus Transit Industry," Transportation Research-Part A, Vol. 17A, No. 3 (May 1983) p. 191.

[13] Ralph Stanley, "Time to Get Back on Track--The Need for Competitive Services In Transit," Privatization Review, Vol. 2, No. 2 (Spring 1986), p. 43; and testimony before the Private Sector Advisory Panel.

To a greater extent than for roads, contributions by the private sector toward the development of transit facilities are dependent on local economics. Local interest in cooperatively financing transit facilities varies from town to town and from corner to corner, with the local economy playing a crucial part.

Development Exactions and Impact Fees

Development exactions and impact fees may be seen as a sort of involuntary public-private partnership in which developers are required to participate in infrastructure financing in order to receive such benefits as building permits and zoning changes. Exactions are assessments upon new development intended to cover the costs of the public services needed to serve that development. They take the form of agreements with or requirements on private developers specifying that in exchange for the public governmental entity granting of zoning changes, building permits or some other necessary allowance, the private developer will help support certain public services by setting aside land for public services or building public facilities.

Fees are monetary charges required by a locality, typically "collected at the time of plot approval or when building permits or certificates of occupancy are issued."[14] Both exactions and fees are designed to transfer or defray the costs of providing specific public services required by new developments. Similar charges have been used for many years in a limited fashion, but only recently adopted to a greater variety of purposes. Previously a locality might attempt to obtain the provision of basic services such as roads, water, sewage systems and lighting through the imposition of exactions or fees. Now exactions and fees are being used for additional purposes such as parks, schools and a variety of other services.

There are three benefits that are general to both exactions and fees. The most basic is that they avoid new local government spending out of general revenues for services prior to the development of a revenue base. Second, the new development bears the cost of the services it requires. Third, local officials simply find it easier to impose impact fees than to risk the political fallout of an increase in property taxes.

On a comparative basis, however, developers tend to prefer fees to exactions. According to a survey of the National Association of Homebuilders, their members report that exactions can be difficult to accurately quantify and price in advance and are inconsistently applied, making final project cost estimation difficult. Fees, on the other hand, are identifiable costs of construction and can, therefore, be calculated into project cost estimates prior to construction.

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[14] Executive Office of the Governor, Florida Capital Facilities Planning and Budgeting: First Annual Report, March 1986, p.57.

The primary drawback of exactions, fees, and assessments is that all costs are borne by the developers who in turn pass some or all of the charges on to the buyer of the developed land. The net impact is that the cost of a new unit in the development may rise by as much as 10 percent. The Urban Land Institute, in testimony before the Panel and in a subsequently published study, reported that a number of factors impinge upon the homebuyer's ability to afford the increased cost of exactions or fees, including, for example, the local economy and availability of alternative housing. However, the study also concluded that "to the extent that they are borne by the buyer, development fees could price a sizeable number of otherwise qualified homebuyers out of the market."[15]

There is also a certain inequity in requiring that new residents shoulder all of the public facility and service costs which were provided to the pre-existing residents as a highly subsidized community investment. In fact, the new home owners will probably be assessed community taxes that go in part to pay for the debt service on the older infrastructure enjoyed by the established residents of the community. Thus, this approach is potentially discriminatory in its treatment of new homebuyers in a community.

Because of these aspects, development fees have been subjected to considerable legal scrutiny. Constitutional challenges have generally taken two forms. First is the objection to the fees on the basis of the absence of authorization in state laws or constitution, and, second, as an "unreasonable regulation exceeding the police power or as a disguised tax" in violation of state constitutional strictures.

Research indicates that state courts have increasingly validated impact fees as a reasonable exercise of police power.[16] However, due to the complexity of the issue, caution must be exercised in the development of legislation. In a study of Florida's experience with these problems, Julian C. Juergensmeyer identifies specific considerations for drafting impact fee legislation, as follows:

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[15] The Urban Land Institute, Paying for Growth: Using Development Fees to Finance Infrastructure, 1986, p.90.

[16] Nicholas, James C., editor, The Changing Structure of Infrastructure Finance, Lincoln Institute of Land Policy, Monograph #85-5, p.40.

1. An impact fee ordinance should expressly cite statutory authority for local government regulation of the substantive area selected.

2. A need for service or improvements resulting from new development should be demonstrated.

3. The fee charged must not exceed the cost of improvements required by the new developments.

4. The improvements funded must benefit adequately the development which is the source of the fee (even if nonresidents of the development also benefit).

5. In place of a rigid and inflexible formula for calculating the amount of the fee to be imposed on a particular development, a variance procedure should be included, so that the local government may consider studies and data submitted by the developer to decrease his assessment.

6. The expenditure of funds should be localized to the areas from which they were collected.[17]

It is important to note the correlation between high growth areas and the viability of certain special financing techniques. Impact fees and exactions, like cooperative private-public transportation facility financing arrangements, are mainly applicable in areas of strong economic growth and development. In areas of static growth or economic decline they have limited application. Thus, those areas which are in greatest need simply cannot impose fees and special assessments, although in some cases they have been able to use a device called tax increment financing to encourage private investment, especially in blighted urban areas. (Tax increment financing is described in Appendix A.)[18]

STATE AND LOCAL FACTORS AFFECTING PRIVATIZATION

A local government which decides to enter into a privatization agreement will find a myriad of legal barriers, each of which must be overcome. These include a host of state and local laws and regulations, federal administrative laws, and federal tax laws affecting both the incentive for the private investor and the availability of tax-exempt financing. Privatization transactions must be carefully structured to meet the requirements of all these laws, and in some cases changes in state or local codes will be needed before a project can advance. This section will outline the important state and local considerations. The federal factors are discussed at pp. IV-27 to IV-38.

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[17] Ibid., p.41.

[18] For a more in-depth discussion of the viability of cooperative financings in economically depressed areas, see Value Capture and Private Investment in Highway Projects, State Transportation Advisory Committee, Pennsylvania Department of Transportation.

State and Local Laws and Regulations

Before a local government enters into a privatization agreement, close scrutiny of state and local law in several areas must be undertaken. The following is a brief outline of the most important issues. In many states, the answer to one or more of these questions may prevent the privatization project from going forward unless a statutory remedy can be obtained.[19]

1. **Power to contract:** Does the local government or public agency have the power to enter into a service agreement? Can it do so on a long-term basis? (Some states have constitutional or statutory restrictions on the ability of municipalities to enter into long-term obligations.) Will future governing bodies be bound by this agreement? Can the government or agency enter into a "take or pay" contract--i.e., a contract under which the recipient must pay for a certain level of service whether or not it is actually used?

2. **Power to convey:** Does the local government or public agency have the power to sell or lease existing facilities to a private company? As noted on page IV-17, if a federally funded wastewater facility is sold, the federal government may have to be reimbursed. There may also be state grant repayment obligations.

3. **Power to purchase:** Can the local government or public agency contract to purchase the facilities from the private vendor at some point in the future? What form must this option take? (For example, federal service contract rules require that the option be for purchase at fair market value related to the availability of tax-exempt financing.)

4. **Bond authority:** Does the local government or public agency have the authority to issue bonds to finance the facility? Would the issue of such bonds be subject to debt limits and procedures imposed by the state constitution or

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[19] Sources are Harvey Goldman and Sandra Mokuvos, op. cit., chapter VII; and James Charles Dobbs, "Rebuilding America: Legal Issues Confronting Privatization," Privatization Review, vol. 1 no. 1 (Summer 1985), pp. 28-38.

statute? Most states and many local jurisdictions place a limit on the amount of debt that may be outstanding at any one time. Also, some sort of public approval process such as a voter referendum is required for bond issues that generally obligate the local government to secure the debt.

5. **Ability to incur and meet payment obligations:** Will a service agreement be characterized as public debt, and thus be subject to state debt limits and procedures? Can payment for services be limited to a special source, fund or revenue stream? Will the public authority's obligation to pay be subject to annual appropriation of funds? Will it be subject to annual expenditure limits or caps?

Does the public authority have the right to assess user charges, and to contract to do so? Will such a contract constitute a lending of its credit? Are such charges limited by state law? In the case of utility services, does the public authority have the power to require residents to hook up to the completed system?

6. **Public utility status:** Will the facility be classified as a public utility under state law? Will it be subject to any regulation by the state public utilities commission? Classification as a public utility not only affects such matters as licensing and rate-setting but also may affect tax treatment.

7. **Sewer use ordinance:** If the facility is a wastewater treatment plant, does the local government have an adequate and enforceable sewer use ordinance that controls the quality and quantity of influent into the system--i.e., does it control industrial discharges into the municipal system?

8. **Eminent domain:** Can the local government or public agency use eminent domain to acquire property and easements for use by the private firm? Can it use eminent domain to take the completed facility from the private owner if necessary?

9. **Procurement laws:** To what extent is selection of the private partner subject to competitive bidding requirements? Is there an exemption for professional service contracts? If competitive bidding is required on non-construction phases of the project, must the award be to the lowest bidder, or can other criteria be used?

10. **Labor laws:** Is the project subject to prevailing wage laws? Will public sector employees be part of the work force? Will employees of the privatizer working at the facility be considered public employees? If an existing facility is sold or leased to a private company, what will happen to public employees currently working there? Will labor contracts be honored?

11. **Land use, environmental and construction laws:** What state and local land use, environmental protection, and construction laws and regulations and permitting requirements apply to the project? As noted above there will probably be federal environmental laws involved as well, requiring multiple permits.

12. **State and local taxes:** Will the facility be subject to state and local income, sales, property and other taxes?

State Privatization Statutes

In order to provide a legal climate within which privatization can occur, many states either have enacted or are considering legislation to overcome the statutory and regulatory barriers discussed above. Others have more general statutes that may be interpreted to grant local governing bodies some or all of the powers needed to enter into a privatization agreement.

As of November 1986, Alabama, Arkansas, Arizona, California, Delaware, Georgia, Indiana, Kentucky, Louisiana, Michigan, Minnesota, Missouri, New Jersey, New York, Tennessee, Utah, Virginia, Vermont, and Washington have statutes specifically authorizing privatization of one or more types of infrastructure. Of these, the Alabama, Arkansas, Kentucky, Minnesota, New Jersey, Utah and Washington statutes are relatively comprehensive privatization statutes.

Alaska, Colorado, Connecticut, Florida, Illinois, Kansas, Maine, Maryland, Mississippi, Missouri, Montana, Nebraska, Nevada, North Carolina, South Dakota, Texas, West Virginia, and Wisconsin have general statutes providing some degree of power to local governments to contract with private entities. Georgia, Illinois, New Hampshire, and South Carolina have had legislation pending during 1986 that would permit privatization of some infrastructure. Bills pending in other states would permit privatization of correctional facilities.

The centerpiece of every privatization bill or statute is the granting to local governments and in some cases other public bodies the right to enter into long-term service contracts with a private entity. Wastewater treatment and water supply are the most common specified services, but others may be included as well. Statutes allowing the privatization of correctional facilities are a growing phenomenon. Most of these bills or statutes also give the public body the authority to sell or lease existing facilities to the private entity.

The more comprehensive state legislation specifies that the facility will not be classified as a public utility. California requires the privatizer to obtain a determination from the state utilities commission that it is not a public utility. Minnesota allows the municipality to elect public utility regulation for the facility.

Arkansas, Kentucky and Utah provide a broad exception from competitive bidding, while Alabama exempts the public corporations created by its statute (these corporations issue bonds for water and sewer facilities and may either acquire, lease, own and operate a water or sewage facility or contract with a private entity to do so). The California and the New York solid waste provisions specify that the selection of a privatizer will be through a competitive procedure, but not based solely on the price offered. Utah requires bidders to show that the cost of their services will be less than the cost of the government's providing the services directly. Minnesota provides an exemption if the municipality has less than a 50 percent ownership interest in the facility and requests proposals from at least two vendors.

An exemption from some or all local taxes is offered by Alabama (for public corporations formed to finance water and sewer services), Arkansas, Kentucky and Minnesota and a separate bill is pending in South Carolina. At least two states provide an exemption from usury laws.

Some statutes and bills address various other issues by specifying that the public body is authorized to enter into take-or-pay agreements, that the public body's obligations under the service agreement shall not constitute public debt, that the public authority has the authority to issue bonds, that it may assess service charges and commit them and other revenues to payment of its obligations under the agreement, and so forth.

The legislation may be very specific in setting out the rights of both the public and private parties under the agreement; the Utah and California statutes, for example, grant several specific powers to the public entity. A few also enumerate various provisions that must and may be in the service agreement. Among the most common are allocation of risk for various events, a provision for termination on default, a requirement that the vendor periodically furnish an operating performance report and an audited balance statement, and the method for determining service charges.

Most of the statutes require public notice and a hearing or other approval process before a local government enters into a privatization agreement. A few go into great detail in specifying the process through which an agreement is entered into, with New Jersey the most notable example.

While privatization statutes are helpful and in some cases essential to local governments' efforts to enter public-private partnerships, they cannot be counted on to solve every problem that may arise with regard to a privatization initiative. As the chart demonstrates, not every privatization statute addresses all of the relevant issues. On the other hand, it is possible for a statute to be so detailed in its specifications that privatization deals are impeded by the bureaucratic maze. This may have happened in the case of New Jersey which has a privatization statute that requires an elaborate and lengthy selection process.[20]

Privatization in the Study States

The five states which took part in the Panel's case studies vary in the degree to which privatization is possible and the extent to which it is actively being considered. New Jersey and Washington have enacted comprehensive privatization statutes, while Florida and Texas have incorporated private funding into their financing mix. In Indiana, on the other hand, privatization is not considered a feasible option at present.

Florida

Florida has not enacted a comprehensive privatization statute, although legislation to create a Privatization Study Commission was enacted in 1986.[21] Florida statutes do specifically allow municipalities to contract with private companies to construct or operate waterworks,[22] and to acquire property by lease and to enter into contracts to facilitate financing.[23] Sections 159.285--159.31 of the Florida statutes govern the issuance of tax-exempt bonds for sewage, solid waste and water projects and provide that projects built by local governments and financed with tax-exempt bonds under those sections must be sold or leased to the private sector for operation and maintenance.

Figures provided in the First Annual Report on Florida Capital Facilities Planning and Budgeting, issued in March 1986, show that the private sector is a significant source of funding for much of Florida's infrastructure, and is expected to remain so for the rest of the decade. However, the pattern of private involvement among different types of infrastructure may shift.

As of 1982 none of Florida's transportation funding came from the private sector. However, it is expected that between 1986 and 1990 about 3 percent ($150 million) of road and highway outlays and 1 percent ($10 million) of mass transit funding will come from the private sector.

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[20] Roger D. Feldman, "Selecting Your Best Target Market: the Status of State Privatization Statutes," in Privatization Opportunities, ch. V, pp. 10-11.

[21] 1986 Fla. Sess. Law. Serv. ch. 216, §2 (West).

[22] Fla. Stat. Ann. §§ 180.14-.18.

[23] Ibid., §§159.28(4).

For environmental infrastructure, on the other hand, private funding, now a significant factor, is expected to decrease in importance. In 1984, private outlays represented 55 percent of expenditures for water supply. While detailed projections for 1986-90 are unavailable, the Department of Environmental Regulation predicts that government will provide a large portion of the needs for new residents. Private funds accounted for 60 percent of all wastewater collection spending and 17 percent funding for wastewater treatment facilities in 1984, or 44 percent of the combined total. It is projected that from 1986-1990 the private share will drop to 34 percent. Finally, 11 percent of spending for resource recovery in 1984 came from private funding, a figure that is expected to drop to 10 percent between 1986 and 1990.

For all infrastructure combined, 14 percent of expenditures came from "private funds and other loans." Between 1986 and 1990, private funds are expected to pay for 12 percent of the $10.63 billion projected for infrastructure outlays.

Indiana

There are a few provisions in the Indiana statutes that permit some degree of contracting by local government, particularly in the solid waste area. Local governments are authorized to contract with a private person for the performance of any "ministerial service,"[24] and are specifically not forbidden from making long-term contracts for utility services.[25] They may contract for the collection or disposal of solid waste[26] and enter into an agreement with a private company for the construction, operation or maintenance of a waste disposal facility.[27] The long-term lease of solid waste facilities is authorized.[28] Municipalities are allowed to lease sewage disposal facilities from a company for up to 50 years, as long as the lease contains an option to purchase. The leased facility is exempt from taxation.[29]

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[24] Ind. Code §5-17-42.

[25] Ibid., 36-4-8-12.

[26] Ibid., 9-30-5.

[27] Ibid., 36-9-31-4(a).

[28] Ibid., 36-9-24 to 36-9-32.

[29] Ibid., 36-9-24-1 to 36-9-24-14.

Indiana took one step towards the development of public-private partnerships with the creation of Indiana Infrastructure Inc. (I^3). I^3 is a not-for-profit corporation established as an educational and research organization to conduct studies of and prepare reports on Indiana's infrastructure and various capitalization strategies. The board of I^3 is drawn from private corporations, government, and academia, with Indiana universities providing much of the research and administrative support. I^3 has issued several studies to date on such topics as public debt law in Indiana, the Indiana bond bank, and creative capital financing.

Some public-private projects have been undertaken in Indiana; however they have required special changes in state law. Indianapolis has contracted with Ogden Martin Systems, Inc. to finance, construct, and operate an $84 million resource recovery plant. This was made possible by special legislation applying only to Indianapolis.[30] The City of West Lafayette formed a partnership with the private sector under which the latter financed, built, owned and operated a solar heating system on the roof of a city swimming pool building and sold the collected energy to the city. The project required a change in state tax laws in order to go forward.[31]

More than piecemeal changes in state law needs to be done in order to realize the real potential for privatization in this state. As Graham Toft, Principal Investigator for I^3 studies, has stated, "Because Indiana is a limited government state, opportunities abound for private sector participation in the provision of public goods and services. However, legal, historical, procedural and institutional barriers presently prevent full participation by its private sector and full exploitation of innovative public/private joint ventures."[32]

New Jersey

The climate for privatization in New Jersey is favorable, as this state has one of the most comprehensive privatization statutes currently existing for wastewater treatment and water supply. The New Jersey Wastewater Privatization Act[33] establishes a comprehensive procedure through which local governments may contract with private firms for wastewater treatment services. The New Jersey Water Supply Privatization Act[34] does the same thing for water supply. Similar legislation[35] provides a process for procurement of solid waste disposal services at resource recovery facilities.

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[30] Testimony of Joseph S. Fragomeni before the Private Sector Advisory Panel on Infrastructure Financing, Indianapolis Regional Hearing, May 19, 1986.

[31] Testimony of the Honorable Sonya Magerum, Mayor of West Lafayette, Indiana before the Private Sector Advisory Panel on Infrastructure Financing, Indianapolis Regional Hearing, May 19, 1986.

[32] Preface to Mark H. Houck, James Tullos Diamond, and Jeff R. Wright, Trends and Issues in Indiana's Water Resources and Infrastructure: A Background Paper Prepared for the Board of Indiana Infrastructure Inc., December 1985, p. iv.

Under these statutes a local government may contract for up to 40 years with a private vendor for the financing, design, construction, operation or management of a wastewater treatment, water supply, or resource recovery system. The procedure by which this must be done is fairly elaborate and is set forth in the statute with great specificity. Provisions which must be included in the service contract are also specified in some detail.

On one of the key privatization issues, exemption from regulation as a public utility, the statutes require that a public hearing be held on proposed rates, at which the Board of Public Utilities may participate. In the case of water supply and resource recovery, proposed contracts must be submitted to the Board for review. Once contracts are approved by the Board, they are no longer subject to Board regulation.

The potential for privatization in New Jersey thus appears to be quite promising. It is likely that the first public-private partnerships will be in solid waste/resource recovery as this is the area of greatest need. As noted above, however, the detailed procedure which must be followed before a municipality can enter into a contract with a private vendor for water supply, wastewater treatment, or resource recovery services may deter those who do not see a clear economic advantage to the transaction.

Texas

While Texas does not have a comprehensive privatization statute, public-private partnerships have begun to play a role in meeting the state's infrastructure needs, particularly in the areas of solid waste disposal/resource recovery and transportation. The Municipal Solid Waste Management, Resource Recovery and Conservation Act[36] encourages cooperation between local government and private enterprise in waste management and resource recovery. In addition, it authorizes a public agency to contract with any person for the lease or operation of a solid waste management system or resource recovery system.

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[33] N.J. Stat. Ann. §§58:27-1 et seq. (1985).

[34] N.J. Stat. Ann. §§58:26-1 et seq. (1985).

[35] N.J. Stat. Ann. §§13:1E-136.

[36] Tex. Rev. Civ. Stat. Ann. art. 4477-7C.

Many city charters prohibit cities from entering into long-term contracts; however, the Act does specify that a home-rule city's charter provision restricting the duration of a city contract does not apply to a city contract that relates to solid waste services. A good number of Texas cities contract with the private sector for solid waste collection and disposal.[37]

Some private sector investment is occurring in the water and wastewater areas. Cities are authorized to contract to purchase water from persons or nonprofit corporations.[38] And in some cases, subdivision developers outside city limits build water and wastewater systems for their developments and then sell them to water districts or other municipal utility districts, which sell bonds to finance the purchase. In some cases, developers receive only 70 percent of their expenses.[39]

As mentioned at page IV-7, roads in Texas that are intended to become part of the federal or state highway systems may be financed through nonprofit transportation corporations. In order to establish a transportation corporation, persons interested in having a particular road built must contact the Right of Way Division of the Department of Highways and Public Transportation. The Division decides whether the road is needed; and if it is, the applicants submit a plan, articles of incorporation, and other materials for approval by the highway commission. So far four corporations have been approved, two in the Austin area and two in Houston.[40] Public-private partnerships are also occurring in the mass transit area; for instance, the Dallas Area Rapid Transit Authority has contracted with Greyhound for the operation of certain bus routes, at a savings of $24 an hour over public operation.[41]

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[37] Texas Research League, Texas Infrastructure: Elements and Issues (August 1986), pp. 41-42, 122.

[38] Vernon's Annotated Civil Statutes, article 1109g, cited in Texas Research League, op. cit., p. 32.

[39] Texas Research League, op. cit., p. 122.

[40] Ibid., pp. 105-6.

[41] Ibid., p. 122.

Washington

The State of Washington has made a solid commitment to privatization and in 1986 laid the legislative groundwork that will allow full utilization of this financing option in the future. Spurred by an estimated $2 billion funding shortage for needed public works improvements and the need for a $1.2 billion cleanup of Puget Sound, the state legislature directed the Department of Community Development (DCD) to undertake a study of the feasibility of innovative financing approaches, including privatization, for meeting public works needs.

In addition, the city of Lynnwood hired Arthur Young & Company to perform a privatization feasibility analysis for a secondary wastewater treatment plant designed to process 7 million gallons a day by the year 2006. Together the two studies showed that "privatization and other forms of joint development can reduce local government's costs for public works projects by 12 percent to more than 50 percent, depending on the type of financing used, whether or not a grant is available, and on assumptions regarding tax reform provisions."[42]

This led in 1986 to legislation to facilitate public-private partnerships for sewage treatment and solid waste/resource recovery facilities. The Water Quality Joint Development Act[43] authorizes local governments to enter into long-term agreements with private service providers for sewage collection, disposal, and treatment. As described by Ron Doctor of Arthur Young & Company at the Panel's Seattle hearing, the legislation also:

> "Establishes a procurement process to protect the public interest while leaving local government flexibility to choose the best qualified service provider with which to contract;
>
> Amends state law to make clear that joint development agreements which are arrived at through the Act's procurement provisions are not subject to Utilities and Transportation Commission regulation;
>
> Establishes limited oversight of the final agreements by the State Department of Ecology;

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[42] Ronald D. Doctor, Arthur Young & Company, Innovations in Infrastructure Financing in Washington State, testimony before the Private Sector Advisory Panel on Infrastructure Financing, Seattle hearing, June 9, 1986, p. 5.

[43] 1986 Wash. Laws. ch. 244.

Ensures that the municipal corporation has clear authority to sell, lease or otherwise make available property for use by the service provider in a joint development arrangement;

Allows state grants and loans to be used by the local government on privatized projects."[44]

The solid waste/resource recovery statute[45] authorizes local governments to contract with private vendors for the design, construction or operation of solid waste systems. It also specifies that solid waste systems may be owned, leased, or operated in whole or part by either a local government or a private vendor.

Alan J. Gibbs, Executive Director of the Municipality of Metropolitan Seattle (Metro), the regional municipal corporation that manages water pollution control and public transportation in the Seattle area, told the Panel in June that Metro is turning to the private sector for assistance in regional water pollution control. Metro has approached the private sector to develop a demonstration project for managing the sludge increase resulting from its planned upgrade of water facilities from primary to secondary treatment. The private sludge processor would be responsible for financing, planning, obtaining permit approvals, construction, operation, and maintenance, and also for the marketing, distribution and use of any end products.[46]

Of the five study states, Washington appears to present the best climate for privatization of wastewater treatment. The state has comprehensive legislation which has been enacted after careful study of both needs and feasibility, and which has been tailored to address the most difficult statutory and regulatory issues facing privatizers.

THE ADVANTAGES OF PRIVATIZATION

State and local governments that choose public-private partnerships as a means of financing public services may find that this method provides significant advantages over financing by traditional means. However, privatization entails risks as well as benefits. Privatization of public services should be undertaken only if it is the best method of providing the service in question.

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[44] Ibid., p. 6.

[45] 1986 Wash. Laws ch. 282 §§16-20.

[46] Testimony of Alan J. Gibbs, Executive Director of Seattle Metro before the Private Sector Advisory Panel on Infrastructure Financing, Seattle hearing, June 9, 1986, pp. 2-3.

Because the needs and the circumstances of each local government vary so widely, privatization will not be the preferable option in many cases. Much will depend not only on local circumstances but also on the private contractor selected and the relationship between the private participants and the local officials.

It is possible to cite numerous benefits that may be realized through public-private partnerships as well as to list possible pitfalls accompanying this option. Many of the pitfalls can be avoided through careful selection by the local government of the private partner and by carefully structuring the privatization agreement. The following description of the Auburn experience provides an example of the benefits realized by one municipality through a successful public-private partnership.

The Auburn Experience

The city of Auburn, Alabama, is a pioneer in the privatization of its municipal sewage treatment systems. Auburn, a growing community of about 30,000, had a wastewater treatment problem. It needed to replace two aging and inadequate treatment facilities to improve environmental compliance and allow for new growth capacity. Recognizing they were too low on the Alabama State priority list to have any reasonable expectation of federal assistance from a construction grant, and pressed with real needs, the city decided to look at other funding options. One option they examined was an arrangement with a private firm to finance, build, and operate the public system.

Auburn decided it liked the "privatization option." Led by the Mayor, the city negotiated an arrangement with a private company to fund, build and operate two new treatment plants with a total capacity of 7 million gallons per day (mgd) and 27 miles of interceptor sewer line. The agreement was signed in December 1984. The first plant was completed under budget and went online in July 1986, almost 50% ahead of schedule.

The project was funded by the issuance of tax-exempt revenue bonds, through the creation of a new public utility service corporation, the Government Utility Services Corporation (GUSC), and did not involve the credit of the city. According to Auburn City Manager Doug Wilson, the city stands to gain not only from economic savings, an estimated $25 million over the 25-year contract period, but also is relieved from the day-to-day management burden of the treatment plant operation.

"The responsibilities of the City of Auburn and the privatizer are clear," said Wilson. "Auburn is responsible for issuing revenue bonds through the GUSC; for signing the service agreement; for monitoring the privatizer's performance; and for collecting service fees from the system users. In exchange, the privatizer designs, builds and operates the treatment plant for the contracted period. As owner of the treatment plant, the privatizer is responsible for meeting all treatment standards, for meeting future needs of the city, and for billing the city for services provided."[47]

The most often-cited benefits of privatization include:

Lower costs: This is perhaps the most often cited benefit of privatization. Cost savings can result from a number of factors: competition among private suppliers, the ability of the private firm to use tax benefits, the private firms' access to the most up-to-date technology and highly skilled employees, more flexible employee hiring and compensation arrangements, and various other design, construction and operation efficiencies. The greatest cost savings are often attributed to including time saved in construction which translates into dollar savings. In addition, once the facilities are operating, costs to the local government under a privatization agreement are far more predictable, as the contract specifies the parameters within which the amounts charged to the government can rise.

Estimates on how much cost saving can be obtained through privatization vary, and will depend on the economics of each project. Harvey Goldman and Sandra Mokuvos in The Privatization Book estimate that construction costs for a wastewater treatment plant may be lowered by from 5 percent to more than 20 percent.[48] A study by the State of Washington Department of Community Development found that privatization and other forms of joint development financing could reduce local government costs for public works projects by 12 percent to more than 50 percent, depending on the type of financing used, whether or not a grant was available, and assumptions regarding the tax reform provisions pending at that time.[49]

Faster completion of project: Privatization avoids the long delays in commencement and completion of a project that often result from the lengthy process of applying and waiting for a federal grant and compliance with various federal regulations and requirements that accompany acceptance of grant funding.

Better service to residents: The provision of services by a private firm with substantial expertise, highly-trained employees, and knowledge of state-of-the art of technology means that residents may well enjoy a better level and quality of service than they would if the facility were municipally owned and operated--and the cost factors cited above may mean that they will pay lower user fees for that service.

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[47] Pollution Engineering, "Auburn Uses Privatization to Solve Wastewater Treatment Needs", July 1985.

[48] Goldman and Mokuvos, op. cit., p. 18.

[49] Doctor, op. cit., p. 5.

Flexibility: Privatization often provides the local government with much more flexibility in such matters as the size and design of the facility and the structuring of user fees.

Shifting of risks: Privatization allows many of the risks accompanying the project--construction delays, failure of the equipment to perform up to standard, etc.--to be shifted from the local government to the contractor.

Among the problems that may arise with privatization are:

Loss of direct control over services: By turning the provision of services over to a private vendor, the local government inevitably gives up some control over service delivery. It is feared that a loss of quality may result.

The profit motive: Opponents of privatization claim that the need for a private vendor to make a profit will result at some point in the future in a reduction in the level or quality of services as a way of reducing the vendor's costs, or higher costs than might be imposed by a nonprofit service provider.

Possibility of service interruption: The provision of services through a private vendor poses a somewhat greater danger of service interruption, either through the failure of the business providing them or through problems such as employee strikes and work stoppages.

Legal obstacles: As discussed above, there are often several legal obstacles that must be overcome before a privatization agreement can be completed. In states without enabling statutes, it may be necessary to enact such legislation.

Displacement of public employees: The privatization of a public service may result in displacing public employees who were performing the service in the past. This poses equity problems as well as political considerations, and also can lead to delay or defeat of a privatization proposal due to opposition from public employees and their unions.

Corruption: Public employee unions have argued that contracting public services to the private sector entails the danger of corruption--bribery, collusive bidding, favoritism, and so forth.[50] While isolated instances of corruption always can be found in activities in which profit is involved, it is unlikely that such instances pose enough of a problem to outweigh the advantages of privatization. In addition, corruption has been known to occur in publicly as well as in privately operated services. Certainly, however, it is critical that procedures be developed to avoid opportunities for corrupt activity.

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[50] see, *e.g.*, Gerald W. McEntee, "The Case Against Privatization," *Privatization Review*, Vol. 1, No. 2 (Fall 1985), pp. 6-9.

Most of these problems can be alleviated or avoided through careful and competitive selection of the private partner, careful structuring of the service agreement, and a comprehensive enabling statute. With regard to the displacement of public employees, the more responsible private vendors have a policy of retaining existing public employees and their unions. In fact, in many privatization projects, public employees have found that they fared better than they had on the public payroll, due to such factors as greater performance incentives and opportunities for upward mobility. The problems may diminish if privatization becomes more common and more enabling statutes are enacted.

While privatization holds great promise for increasing the funds available for investment in infrastructure, this promise could be thwarted by general laws and policies. Recent changes in tax law could have a significant negative impact on private investment in public works.

FEDERAL ROLE IN PRIVATIZATION

While state and local laws, regulations, and practices are crucial to the viability of public-private partnerships in a given location, federal laws and regulations may determine the future potential for these public-private partnerships. Federal grant programs, federal regulatory requirements, and federal tax treatment are as important as state and local factors, if not more so, in considering the feasibility of such partnerships.

Administrative Requirements of Federal Programs

Privatization projects, particularly those involving environmental facilities, have to comply with a host of federal regulatory requirements. An important task in the initial stages of a project is to identify those regulations that will apply to the project and determine what will be needed to obtain the necessary permits. Usually the private vendor assumes responsibility for obtaining permits. Coordinating the multitude of federal and state permits that may be necessary in a timely fashion can be a large task.

Among the federal requirements to which a privatization project may be subject are the filing of an Environmental Impact Statement; obtaining a Prevention of Significant Deterioration Permit (required by the Clean Air Act if discharges are made into the atmosphere); obtaining a National Pollution Discharge Elimination System permit (required for the discharge of any material, liquid or solid, into any surface water of the United States); and obtaining a Generator Identification Number under the Resource Conservation and Recovery Act.

In the case of a transportation project, the Uniform Relocation Assistance and Real Estate Acquisitions Policy Act and Section 323 of the Federal-Aid Highway Act must be considered as well. The former requires just compensation for property owners of land used for right-of-way purposes, while the latter allows the property to be donated if the owner is informed of his rights and elects to waive compensation. In addition, any privatization project might be subject to such federal laws as the Davis-Bacon Act (which requires that workers on the project be paid the prevailing wage in the area) and the equal employment opportunity requirements of Title VII of the Civil Rights Act of 1964.[51]

If the privatization agreement involves the sale of a municipal wastewater facility funded with a federal sewer construction grant, the parties must comply with an Office of Management and Budget (OMB) requirement that the grant recipient "not dispose of or encumber its title or other interests in the site and facilities during the period of Federal interest or while the Government holds the bonds, whichever is longer." The "period of Federal interest" is not defined, but may mean the facility's useful life.

If the facility has reached the end of its useful life and the municipality sells it to the privatizer, regulations require that a pro rata share of the proceeds be turned over to the federal government. OMB will waive the repayment requirements under certain circumstances, but it may be easier to structure the arrangement as a lease under which the operator owns any improvements made to the system, rather than as a sale.[52]

Federal Tax Laws

Federal tax provisions relating to capital cost recovery, tax-exempt bonds, the distinction between leases and service contracts, and the amount of investment losses deductible by individual taxpayers all affect the ability of local governments and private vendors to design an agreement under which services are provided at a reasonable cost to the government while assuring a rate of return that will make the project economically feasible for the private vendor. The enactment of the Tax Reform Act of 1986 (TRA) has made this task far more difficult, as discussed in Chapter III.

Capital cost recovery: depreciation and investment tax credit

Taxpayers may recover the cost of a capital investment by deducting each year an amount representing the portion of the property's value that is lost that year through depreciation. If capital cost recovery were based strictly on economics, the cost of the property would be recovered over the actual useful life of the property, with an equal amount deducted each year. Deducting an equal amount each year is known as "straight-line" depreciation.

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[51] Walton, Euritt, and Souleyrette, op. cit., p. 23.

[52] Goldman and Mokuvos, op. cit., pp. 106-107.

In order to encourage investment, however, Congress created the Accelerated Cost Recovery System (ACRS) in 1981. Under ACRS, property is assigned to one of several classes (six under the original system, eight under the system as amended by TRA), each of which has a specified cost recovery period that in general is shorter than the property's actual useful life. Furthermore, depreciation is through the "declining balance" method.[53] Under this method, the taxpayer does not deduct an equal portion of the property's cost each year, but rather deducts a greater portion in the early years of depreciation.

The availability of ACRS has been an essential component in privatization arrangements, allowing private owners a relatively rapid writeoff of their investment in the facility. The large deductions provided by the original ACRS system in the first few years after the investment was made helped compensate for the fact that profits from infrastructure facilities are apt to be lower and longer in coming than for many other types of investments.

Under ACRS as originally enacted, most of the machinery and equipment (80 percent to 90 percent) within a privatized facility could be depreciated over five years. If the property was not bond-financed, the depreciation could be accelerated through the "150 percent declining balance method," which provides greater benefits in the early years by front-loading the depreciation. In addition, much of this property--again, 80 percent to 90 percent--was eligible for the investment tax credit (ITC), which was taken in the first year. The ITC, which was equal to 10 percent of the cost of the property, was a direct reduction of the federal tax that would otherwise be owed by the taxpayer.

This incentive has been significantly reduced by the passage of the Tax Reform Act of 1986, which substantially revises the capital cost recovery system. The ITC is repealed and depreciation periods for sewage, solid waste, and water facilities are lengthened. Furthermore, if the property is financed with tax-exempt bonds, it is depreciated over the property's "ADR midpoint" life,[54] using the straight-line method -- i.e., no acceleration of depreciation deductions into the early years. (Prior to TRA, it was depreciated using the straight-line method over the ACRS life.)

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[53] Under TRA, real property must be depreciated using the straight-line method.

Under the new system, solid waste facilities will be depreciated over 7 years (200 percent declining balance), sewage treatment plants over 15 years (150 percent declining balance), and sewer pipes and water supply facilities over 20 years (150 percent declining balance). If these facilities are financed with tax-exempt bonds, they will be depreciated over 10, 24, and 50 years respectively, using the straight-line method. The lengthening of recovery periods for sewage treatment and water supply facilities poses a serious question as to whether full-scale privatization of these facilities will continue to be feasible.

To take a highly simplified example of how TRA has reduced the incentive for privatization, imagine a privately owned wastewater treatment plant costing $1 million and with no IDB financing, and assume also that property equaling 80 percent of the plant's cost, or $800,000, is eligible for ACRS and the ITC. To keep the example simple, collection lines will not be taken into account.

In the first year of the investment, the private owner of the plant would have been able directly to reduce its tax liability by $80,000--the 10 percent investment tax credit. In addition, the owner would receive a first-year depreciation deduction of $114,000. Assuming the taxpayer is at the 46 percent top corporate rate, its total tax savings (or viewed another way, its increase in after-tax earnings) would be $132,440 ($80,000 plus 46 percent of $114,000). The next year, the depreciation deduction would be $167,200, and for the next three years, $159,600 each year. Over the first five years of the investment, the taxpayer would save $429,600 in taxes due to ACRS and the ITC.

Under TRA there is no investment tax credit, and the first year depreciation deduction would be $40,000. At a top corporate

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[54] The asset depreciation range (ADR) system was used before the enactment of ACRS as a safe harbor for taxpayers who did not wish to make their own approximation of the useful life of their property. The system assigns each of several classes of property a range of allowable time for depreciation, with the "ADR midpoint life" or "class life" falling in the middle of the range. Each class's asset depreciation range represents the IRS's estimation of the average useful life of property in that class. The actual useful life calculated by the taxpayer might be greater or lesser than the IRS estimate. Sewage treatment plants and pipes, which had no ADR life, were assigned class lives as part of the Tax Reform Act of 1986.

rate of 34 percent, the deduction is worth $13,600. The first-year tax saving thus drops by almost 90 percent. Deductions for the next four years would be less than half those allowable before tax reform. The total five-year tax savings (or increase in after-tax earnings) attributable to capital cost recovery drops to $106,080, a 75 percent decrease. Table I depicts these differences.

Table 1

ACRS Deductions

	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL Years 1-5
Old ACRS	$114,000	$167,200	$159,600	$159,600	$159,600	$760,000
New ACRS	$ 40,000	$ 80,000	$ 72,000	$ 64,000	$ 56,000	$312,000

Increase in After-Tax Earnings Due to Capital Cost Recovery

	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL Years 1-5
Old law	$132,440	$ 76,912	$ 73,416	$ 73,416	$ 73,416	$429,600
New law	$ 13,600	$ 27,200	$ 24,480	$ 21,760	$ 19,040	$106,080
Change in tax savings due to TRA	($118,840)	($ 49,712)	($ 48,936)	($ 51,656)	($ 54,376)	($323,520)
% Change	-89.7%	-64.6%	-66.7%	-70.4%	-74.1%	- 75.3%

Of course, under TRA the taxpayer will continue to take depreciation deductions for ten more years and will eventually recover the full cost of the property. However, the present value of the full amount will be substantially less because of the long delay in recovery (the "present value" concept adjusts the value of a given amount of money to be received in the future to reflect the value to the recipient of immediate receipt).

More to the point, the tax savings resulting from ACRS and the ITC have been used by investors to compensate for the fact that the return on the investment in a wastewater treatment plant is very low in the early years. If these savings fall below a certain level, the taxpayer may not be able to maintain a sufficient cash flow to cover its costs until the return on the investment begins to come in. The figures in Table 1 suggest that in the case of sewage treatment plants, depreciation under TRA will leave the taxpayer well below that level. As the depreciation period for water supply facilities is even longer than that of sewage treatment plants, this is undoubtedly true for water supply as well.

Normalization

If the facility is classified as a public utility, it is required to "normalize" the benefits of accelerated depreciation. Normalization requires that the company calculate its tax expenses for rate making purposes as if it were not receiving the benefit of ACRS. In some states, this requirement may conflict with state law or regulation.

Recapture

Prior to tax reform, depreciation deductions for personal property and some real property were subject to "recapture" when the property is disposed of. The taxpayer's gain from the disposition of the property was treated as ordinary income rather than capital gain to the extent of depreciation deducted. Under TRA, recapture continues for personal property, although the fact that there is no lower rate for capital gains and recapture appears to make it irrelevant. If the ordinary income rate rises again in the future, however, the capital gains differential might well be restored.

Service Contract Rules

Provisions in the tax code enacted as part of the Deficit Reduction Act of 1984 (DEFRA) denied the use of ACRS and the investment tax credit for property owned by a private entity and leased to a nontaxable entity such as a local government. Instead, such property is depreciated using the straight-line method over the the ADR midpoint life or 125 percent of the term of the lease, whichever is longer. It is thus important, even with the reduced tax benefits available under TRA, that a privatization arrangement be structured to qualify as a service contract rather than a lease.

DEFRA identified six criteria for determining whether an agreement is a service contract or a lease:

1) whether the service recipient is in physical possession of the property (i.e., whether it is located on his premises or located at his premises but operated by his employees);

2) whether the service recipient is in control of the property (i.e., whether he dictates the manner in which the property is operated, maintained, or improved);

3) whether the service recipient has a significant possessory or economic interest in the property (this would include such factors as dedication of the property's use primarily to the service recipient; a sharing by the service recipient in the risks of decline in value of the property and property loss or damage; and a sharing by the service recipient in the benefits of appreciation in value of the property or savings in operating costs);

4) whether the service provider bears any risk of substantially diminished receipts or substantially increased expenditures in the case of nonperformance under the contract;

5) whether the service provider uses the property concurrently to provide services to other entities unrelated to the recipient; and

6) whether the total contract price substantially exceeds the rental value of the property for the contract period.

An exception from the general service contract rules is provided for contracts involving solid waste, energy, and wastewater treatment facilities. These contracts will not be treated as leases so long as the tax-exempt entity or other service recipient does not:

1) operate the facility;

2) bear any significant financial burden if there is nonperformance under the contract (other than for reasons beyond the control of the service provider);

3) receive any significant financial benefit if operating costs of the facility are reduced as the result of technological changes or other efficiencies introduced by the service provider; or

4) have an option to purchase or may be required to purchase all or part of the facility at a fixed or determinable price other than fair market value.

Additional guidance has been provided in Xerox Corporation v. United States, 656 F.2d 659 (1981). In that case, Xerox successfully argued that its arrangements with customers were service contracts. The criteria used in deciding were that 1) Xerox retained control of the machines; 2) Xerox bore the risk of loss; 3) Xerox had the right to remove and replace the machines with similar machines; 4) Xerox was responsible for making all repairs; 5) the machines were an integral part of providing the service, and 6) customer payment was determined by usage rather than by duration of service.[55]

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[55] Goldman & Mokuvos, op. cit., p. 135.

At-Risk Rules

The at-risk rules prohibit an individual or a closely held corporation from taking more in depreciation or other deductions than the amount he has at risk. The at-risk amount is the amount of cash or property actually contributed by the individual plus the individual's recourse debt--i.e., debt for which he is personally liable. If the privatization arrangement is structured through a limited partnership with the tax benefits flowing through to the limited partners, the at-risk rules must be taken into account.

As the financing in privatization transactions currently tends to be non-recourse, limited partners usually are corporations with an interest in the project; however as privatization becomes more widely accepted, more recourse financing may be used, allowing more individual investors to participate.[56]

Passive Loss Provisions

Financing through limited partnerships will be further constrained by the passive loss provisions enacted as part of TRA. The new rules, which apply to individuals, personal service corporations, and to some extent closely held corporations, prohibit the taxpayer from deducting losses from "passive activities"--defined generally as those in which he does not materially participate and specifically as limited partnerships--to the extent they exceed income from those activities. Thus, "passive losses" may not be used to offset active income, such as salaries and business income, or "portfolio income" such as interest and dividends. Closely held corporations may take passive losses against passive income, but not against portfolio income.

Losses that are not allowed can be carried forward indefinitely and taken when there is passive income to offset them, or when the taxpayer disposes of his interest. The provision is phased in over several years, with 35 percent of net losses disallowed in 1987, 50 percent in 1988, 80 percent in 1989, 90 percent in 1990, and all net losses in 1991 and thereafter.

Like the at-risk rules, the passive loss rules will tend to narrow the field of investors for a limited partnership privatization arrangement and make this a less attractive option for financing public-private partnerships.

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[56] Ibid., p. 133.

Alternative Minimum Tax

The alternative minimum tax (AMT) is also a factor that must be taken into consideration, particularly since TRA has greatly broadened its scope. Under the AMT all or part of various credits and deductions ("preference items") taken by the taxpayer are added back to taxable income, and taxed at a rate of 22 percent. If the resulting tax is greater than the taxpayer's regular tax, the taxpayer pays the AMT.

Among the AMT preference items under TRA that may affect an investor in a privatization arrangement are depreciation (the amount of depreciation taken on personal property that is included as a preference item is equal to the difference between ACRS depreciation and depreciation over the property's ADR midpoint life calculated using a 150 percent declining balance), interest on private activity tax-exempt bonds, and net passive losses (with no phase-in).

Biomass Energy Tax Credit

A business tax credit is available for investment in biomass energy property, defined as 1) a boiler or burner that uses an alternate substance (i.e., any organic substance except oil, gas, coal or their products) or 2) equipment for converting an alternate substance into a synthetic solid fuel or alcohol for fuel purposes. Equipment for capturing methane gas from sludge digesters in a sewage treatment plant would be one example.[57]

The credit cannot be used for public utility property. If the facility is financed with tax-exempt bonds, the credit is reduced in proportion to the amount of such financing. Although the credit originally was due to expire on December 31, 1985, TRA extends it for two more years at a level of 15 percent for 1986 and 10 percent for 1987.

Tax-Exempt Bonds

Tax-exempt bonds have been an important form of financing for privatization projects. In most cases, financing is done through exempt-activity industrial development bonds (IDBs). Infrastructure projects eligible for exempt-activity IDB financing include sewage treatment, solid waste disposal, and water supply facilities; airports; docks and wharves; mass commuting facilities; and district heating and cooling facilities. In most cases eligibility for IDBs is not affected by private ownership or management. If water supply facilities are privately operated, however, their rates must be governmentally set or regulated.

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[57] Ibid., p. 129.

Since DEFRA was enacted in 1984, the availability of IDBs for all of these except publicly owned airports, docks and wharves has been limited by a state-by-state volume cap. Until TRA was passed in 1986, the cap was equal to the greater of $150 per state resident or $200 million. Other restrictions have been applied to IDBs since 1984, including a requirement that 90 percent of the proceeds be used for the bond's exempt purpose; a public hearing and approval requirement; and a requirement that arbitrage proceeds be rebated to the federal government.

If the facility is governmentally owned and the management contract meets certain requirements, it may qualify for financing through governmental bonds, i.e., bonds for which the private use of the proceeds and the private participation in securing the debt service is insufficient to classify them as IDBs. Until TRA, governmental bonds were free of most of these restrictions, and they still are free of the volume cap to a large extent.

TRA will make it much more difficult to finance infrastructure facilities, particularly sewage treatment and water supply, with either governmental bonds or IDBs. Particularly harmful are the changes in the volume cap, which is lowered to $75 per resident (or $250 million) for 1987 and $50 per resident ($150 million) in 1988 and thereafter, and which covers several types of bonds that were previously excluded or under separate caps. Other restrictions are added as well.

These restrictions, taken together, pose a serious threat to state and local governments' ability to finance their infrastructure needs, including financing through public-private partnerships. For a more thorough discussion of the restrictions on tax-exempt bonds, see Chapter III.

Federal Executive Policy

As we have seen, the federal government plays an indirect role in encouraging or discouraging public-private partnerships in several ways. Federal tax provisions, although they may not have been enacted with this purpose in mind, have played a large role in encouraging privatization in the past and may play an equally large role in discouraging it in the future.

The availability (or lack) of federal grant money through environmental, public works, and economic development programs also plays a large role in local decisions to privatize. Federal statutes and regulations imposing requirements that are difficult or costly for the local governments to meet on their own can also be an important factor. Perhaps the most notable example would be the requirements of the Clean Water Act, which have been a key in precipitating the emergent trend towards privatization of wastewater treatment.

It is possible, however, for the federal government to play a much more direct role in encouraging privatization. While it is arguable that the Reagan Administration's championing of more sweeping forms of privatization than the public-private partnerships discussed here could create a backlash against any form of privatization, it seems likely that the Administration's strong emphasis on greater private sector involvement in the provision of services has helped create a climate in which privatization could flourish.[58]

Concrete support within specific agencies of the federal government has grown over the past few years. As Prescott Bush, Chairman of the Privatization Council, noted in testimony before the Panel in January, the "contracting out" of certain services at the federal level has become a common practice since the promulgation in 1955 of OMB Circular A-76, which provides an analytical framework for deciding when to use private contractors. In recent years, according to Bush, "federal agencies have begun to support a different type of privatization: the financing and/or development of facilities using private resources which further the goals of the programs that the Federal agencies administer."[59]

Bush listed several agencies which have gone on record as supporting privatization and are actively considering projects to be financed or developed by private contractors. Among the most notable in terms of infrastructure financing are the Environmental Protection Agency, which advocates private development of wastewater treatment, drinking water, and hazardous waste disposal facilities;[60] and the Department of Transportation, which supports private development of mass transportation facilities and of highways and bridges.[61]

The current Administration support for privatization is a two-edged sword, however, for it is coupled with an advocacy of the abdication of much of the federal role in assisting state and local infrastructure financing through the reduction or elimination of such programs as sewer construction grants and mass transit operating assistance. It should be stressed again that this is not the role the Panel intends in using the term "privatization."

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[58] Note, however, that by its support for the sweeping changes made in the Tax Reform Act of 1986, which are likely to discourage privatization, the Administration has placed itself in a somewhat contradictory position on this issue.

[59] Testimony of Prescott S. Bush, Jr., Chairman of the Privatization Council, before the Private Sector Advisory Panel on Infrastructure Financing, January 22, 1986, p. 14.

[60] The EPA recently (November 18-20, 1986) sponsored a national conference in New Orleans on innovations in financing water facilities which included privatization as a major topic.

[61] Bush, op. cit., pp. 15-16.

CONCLUSION

The financing of infrastructure facilities through public-private partnerships is one of the most promising answers to the challenge posed by growing need and limited government resources. In the transportation area, roads are being financed wholly or partially by private property owners and developers who are helping to deal with the consequences of development in return for the benefits they receive; and the private sector is increasingly contributing to the development of mass transit facilities.

The privatization of environmental facilities is an area of particular promise, as private capital and technology is needed to meet environmental standards established over the last few years. Privatization of solid waste/resource recovery facilities has been a major success and has set a precedent that can be adapted to other types of environmental facilities.

Two areas with great potential for the use of public-private partnerships are wastewater treatment and water supply. In both cases, there is a growing need for new facilities to comply with environmental regulations coupled with an insufficiency of federal funding. Some municipalities have already chosen privatization as the means of financing needed wastewater treatment facilities, and if the tax laws had remained unchanged this trend would undoubtedly have continued to grow unabated.

The Tax Reform Act of 1986, however, has dealt a serious blow to public-private partnerships in these areas. Longer depreciation lives and new restrictions on tax-exempt bonds will make private ownership of wastewater treatment facilities a less attractive option and new private investment in water supply facilities highly unlikely. Because of the overwhelming need, municipalities will continue to finance environmental facilities through public-private partnerships; however, the form of these partnerships will have to change. There will be less private ownership and more use of taxable bonds. This will reduce the cost savings that can be derived through privatization.

Other factors also affect the formation of public-private partnerships: federal regulations, administration policies, and state and local laws and regulations. On the whole, however, the federal tax laws have the greatest and most immediate impact on the ability and the desire of the private sector to participate in the financing and development of our nation's infrastructure. If federal policymakers wish to maximize private participation, it may be necessary to make some changes in the tax code as it stands after the Tax Reform Act of 1986.

V. INVESTMENT DECISION MAKING: CAPITAL PLANNING, BUDGETING, AND MANAGEMENT

In an environment of limited resources and expanding needs, it is essential that state and local governments develop the capacity to evaluate their investment options, and where possible, select the most cost effective solution to address priority problems. In some cases this will entail new capital investment, but in other cases closer attention to operation, maintenance and rehabilitation of existing facilities can avoid or limit the need for new facilities while still providing adequate public service.

Likewise, appropriate facility design, efficient construction, and professional operation have a critical impact on governmental budgets, affecting both the requirements for capital outlay and the eventual need for replacement and new capacity.

In the past, federal investment policy has not really fostered this type of planning, cost effective investment, and efficient operation and maintenance. Federal assistance for infrastructure has had a definite investment bias, with little or no support for proper operation and maintenance. Moreover, the rigid application of federal compliance requirements, with mandated programs, has limited localities in their capacity to make cost-effective project selections.

Public works literature is replete with examples where more flexibility in complying with federal mandates or the availability of federal subsidies would have led to more efficient solutions.[1] It is also full of examples where more attention to operation of existing facilities would have obviated, deferred, or substantially diminished the need for new capital structure.[2]

During its study, the Panel gathered information and received testimony indicating that efficiencies can be achieved in capital outlay through better planning, design, management, operations, and repair. To do so, many states and localities are initiating or improving comprehensive capital planning processes.

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[1] Congressional Budget Office, "Efficient Investment in Wastewater Treatment Plants," June 1985.

[2] U.S. General Accounting Office, Better Planning Can Reduce Size of Wastewater Treatment Facilities, Save Millions, July 8, 1982.

Constraints on Local Governments

A community's latitude for making choices and ranking alternatives for investment purposes is seriously limited by available financing, federal and state law and regulation, bureaucratic institutional arrangements, changing needs, and political realities. In an environment of relative scarcity, facilities tend to get built or repaired on the "squeaking wheel" principle. Public safety and necessity take precedent. Available capital is allocated to those things that need fixing the most--those streets in worst repair, those roads and highways where traffic congestion and hazards have become most apparent, and those services and facilities where public demand is most pronounced.

The assertion of federal policy and the availability of federal dollars also has a pervasive influence on local investment. The use of federal funds for major urban highway construction generates a host of other requirements for additional utility services, road extensions and upgrades, surface water drainage systems, lighting, and landscaping. While the cost of these improvements may eventually be recouped by increasing taxes in the affected areas, they still require an initial outlay of public funds from the locality. Also, once built, they create a new demand on the locality for service and upkeep.

Federal dollars for infrastructure have a definite investment bias. With the major exception of the "4-R" federal highway rehabilitation program and some federal assistance for transit operation and maintenance (see Chapter I on the federal role for a detailed explanation), very little federal money is available to states and localities for operation and maintenance. And even the 4-R highway funds are available only for the repair and restoration of those roads previously built with federal assistance.

Federal law and regulation dictate the direction of much local public works investment. Uniform federal requirements for the collection and treatment of municipal sewage and the control of surface water run-off place large financial responsibility on localities to develop and operate municipal wastewater treatment systems. Recent environmental requirements for disposing of solid and hazardous waste in ways that protect the public health and natural environment, including ground water, will require many localities to replace existing sanitary landfills. In a recent survey of counties across the U.S., respondents identified solid waste management as the area in which they anticipated the largest future capital investment.[3]

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[3] National Association of County Officials Survey, Unpublished.

Additionally, new national requirements for control of organic contaminants in drinking water, protection of ground water from leaking underground storage tanks, and restoration of contaminated ground water will place new and often substantial costs on local governments.[4] Once in place, these public works investments carry with them annual requirements for operation, maintenance, and eventual replacement. The relative increase in state and local operational budgets over the past several years is believed to be directly related to the large capital outlay in previous years from federally related programs.[5]

State laws, requirements, and constitutional constraints also limit a locality's flexibility in selecting alternatives. This is especially true of state-imposed limitations on a locality's authority to enter the debt market. Limitations on revenues, bonded indebtedness, and spending are discussed in Chapters II and III.

Finally, a practical consideration that can limit or frustrate effective planning in many localities is the diversity of local governmental entities and the proliferation of special districts, all with responsibilities or authority for some aspect of service or facility management. Development and investment decisions of water districts impact land use patterns, as do utility services. The American Public Works Association Research Foundation noted in a recent paper that the sheer number of public agencies complicates the planning, coordination, and integrated management of public works infrastructure.[6]

But within the constraints of these limitations, systematic planning and budgeting processes are a useful, even essential tool for making capital investment decisions. Many cities, especially larger ones, are developing capital planning and budgeting processes that attempt to define long-term capital needs, integrate them with budget priorities, and assess the secondary effects of these investments on the operational and management budget as well as on the revenue base. These exercises, referred to as capital budgeting or capital improvements programming, are gaining currency in the professional literature and are being implemented in cities throughout the United States.

Moreover, some states are taking the lead in requiring a better level of capital development planning at the local level. Washington State, for example, requires a local plan as a prerequisite for eligibility for state loans from its Public

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[4] Safe Drinking Water Act and the Resources Conservation and Recovery Act.

[5] Congressional Budget Office, op. cit., p. 6.

[6] American Public Works Association paper for the National Council on Public Works Improvement, 1986.

Works Trust Funds. Florida has initiated a comprehensive approach to state and local planning and budgeting as part of its Capital Improvement Program.

Capital Budgeting: Cities

As a technique for the management and acquisition of capital assets, the capital improvements program (CIP) device is now common at the municipal level. According to an American Public Works Association survey in 1980, 54 percent of the responding cities and 52 percent of the responding counties employed a long-range public works capital improvements program. As might be expected, the percentage increased with the size of the locality, with 89 percent of those cities over 250,000 using the CIP process.[7]

In 1982, the Urban Institute found in a random survey of medium-sized cities that 84 percent had a multi-year CIP. Based on this and other information, a recent paper prepared by the Urban Institute concludes that "we do not believe that lack of a capital budget or multi-year capital improvement programs is a national problem in state or local government."[8] More to the point is how useful they are in assisting the local government in decision making. This in turn depends to a great extent on how they are designed and used by the governmental body.

According to a recent survey of research literature, "there is little comparative analysis or time series analysis to examine whether different CIP processes and procedures really make a difference in the level and type of capital maintenance and investment decisions made by levels of government."[9] Some cities such as Houston, Texas, a new convert to capital budgeting, have identified the process as a critically important innovation in defining infrastructure financing requirements.[10]

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[7] American Public Works Association, Public Works Management Trends and Developments, Chicago, 1981.

[8] The Urban Institute, The Capital Investment and Maintenance Decision Process, July 1, 1986, p. 10.

[9] Deloitte Haskins & Sells, et. al., A Review of Current Capital Budgeting and Public Works Management Practices, 1986, p. 17.

[10] Texas Research League, Texas Infrastructure: Elements and Issues," A Report to the Governor, August 1986, p. 99, prepared for the Private Sector Advisory Panel.

Based on a review of much of the current literature, the following characteristics seem to distinguish the best CIPs:

- They are based on a comprehensive and accurate inventory of capital stock and its condition;
- They are integrated into the budget development process;
- They include realistic evaluations of the life-cycle operational and maintenance costs;
- They serve the needs of political officials as well as the bureaucracy;
- They provide for an evaluation of the relative benefits of alternative capital investment options, including rehabilitation and replacement;
- They are integrated with the land use and economic development plans of the area.

The above cited survey of research literature in this area compared the CIP process in seven major metropolitan areas: Baltimore, Milwaukee, Oakland, Philadelphia, San Francisco, San Jose, and the County of San Diego. The evaluation identified some limitations in the municipal CIP processes.

The most common limitation cited was that in most cases major components of the cities' infrastructure system were not within the budget and planning purview of the city. This was the case with several of the sewer and water supply systems which operated as independent districts. In other cases, the utility districts or public works agency provided the inventory and needs assessment data with the planning and budgeting agency having no independent capacity to verify or question the data.[11]

The survey also concluded that when proposed budgets present quantitative data demonstrating the implications of deferred maintenance, the elected officials frequently opt for adequate maintenance budgets. Likewise, the Urban Institute study concluded that the greatest positive impact on the facilities' maintenance budget is likely to be achieved "by systematic analysis of impacts of deferred maintenance in terms of long-run consequences."[12]

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[11] Deloitte Haskins and Sells, op. cit., p. 59.

[12] The Urban Institute, op. cit., p. 73.

In the context of their CIP process, some cities are taking measures to assure the availability of funds for major facility maintenance and rehabilitation. Seattle has earmarked a portion (25%) of the city's cumulative reserve fund for a special fund dedicated to major maintenance and renovation. One quarter of one percent of the city's real estate sales excise tax also goes to the fund. Established in 1977, the fund now has sufficient reserves, the Panel was told, to cover 72 percent of the city's CIP expenditure for major maintenance, repair, and renovation.[13]

State-Imposed Capital Budgeting Requirements

Some states have begun requiring localities to develop capital budgeting plans, usually as a precondition for assistance from state development loan banks or revolving loan funds. This is the case in the State of Washington, one of the Panel study states, where it is applied in conjunction with loans from the Washington State Public Works Trust Fund.

Characteristically, this requirement has its greatest impact on smaller communities which often do not possess the professional staff and techniques for comprehensive budgeting exercises. Although there is no comparative analysis available on how effectively this state-imposed requirement is being implemented, or the impact on eventual local capital investment decisions, those associated with the exercise generally perceive that it has disciplined small communities' consideration of investment choices and long-range needs.

As applied in Washington, the exercise is not excessively taxing or time consuming. It is valuable to both the community and the state in assessing the legitimacy of various investment options. As a component of a state-operated infrastructure loan or development program, it seems an advisable and even necessary requirement. The planning process helps the state rank applications on a basis of priority relative to need, capacity for repayment, access to alternative funding, and commitment to long-range operation and maintenance requirements. The description contained in the box below was compiled and edited from information provided by the Washington State Public Works Board.

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[13] Testimony of Gary Zarker, Budget Director, City of Seattle, before the Private Sector Advisory Panel on Infrastructure Financing, Seattle, Washington, June 9, 1986.

Washington State Capital Planning

The Washington State Public Works Trust Fund is built on the premise that the solutions which are most effective in solving local public works problems are those which improve local governments' ability to finance improvements on their own. A consequence of this concern is a commitment on the part of the Trust Fund to encourage local governments to engage in and improve their capital improvement planning processes, in order to improve the productivity of their public works expenditures. In order to promote this objective, the legislation creating the Public Works Trust Fund program gave the newly created Public Works Board the power to provide technical assistance to local governments. This was defined as helping local governments improve their ability to "plan for, finance, acquire, construct, repair, replace, rehabilitate, and maintain public facilities." The legislation also required that, in order for a community to qualify for a loan from the Trust Fund, it must have developed a long-term plan for financing its public works needs.

The Public Works Board has indicated a desire to increase the stringency of the minimum capital planning requirement for participation in the loan program over time. In order to assist jurisdictions to meet this requirement, the Trust Fund is initiating a technical assistance program to provide help to local governments in developing capital improvement planning processes.

In addition, in order to pursue the program's commitment to capital planning, the Department of Community Development has developed the Washington State Capital Planning Manual, to be published in early 1987. Capital improvement planning is defined in the manual as a systematic process used by a jurisdiction to identify future public facility and equipment needs, set priorities, consider financing alternatives, and develop a long-range capital plan.

The value of capital improvement planning in providing a method for local governments to examine needed capital projects, to prioritize them, and to explore financing options in a public setting will become more critical as financial assistance from other levels of government declines.

An additional element which increases the value of local capital planning is the evaluation of local effort as an element in the Trust Fund's prioritization process. As Trust Fund loan cycles grow in the coming years, the rewards for local capital planning in the fund's prioritization process will add to the incentive for local capital planning. The combined impact of the decline in grant support, the growing availability of low-interest loan programs, and the examination of effort by financial assistance programs will serve to increase the importance for local governments of management tools that help stretch limited local funds.

Capital Budgeting: States

Many states also use capital budgets employing a multi-year CIP process to project future needs beyond the current budget cycle. The National Conference of State Legislatures conducted a survey which indicated that twenty-eight states employ capital budgets.

In 1984, the State of Florida surveyed other states to determine how they planned and budgeted for capital expenditures. Twenty-eight states responded. Not surprisingly, the Florida survey concluded that states with multi-year planning and budgeting processes covering five to seven years appear to have the most comprehensive capital improvement plans. They identified the states of Maryland, New Jersey, New York, and Tennessee as having the capability to identify and plan for new facilities and maintenance projects well in advance.[14]

Others, however, are quite rudimentary, and a number of states resemble Texas in that "there is no centralized capital or other planning and budgeting mechanism or agency at the state level. Beyond adapting constitutional and statutory debt and tax limits and exercising oversight functions in federal grant programs, the state also has little control over local finances."[15]

State-Level Capital Facilities Budgeting

State	Separate Capital and Operating Budgets?	Separate Facility O&M Costs From Program Costs?
Alabama	yes	no
Arizona	yes	no
Arkansas	yes	no
Connecticut	yes	no
Delaware	yes	yes
Georgia	yes	yes
Hawaii	yes	no
Illinois	yes	no
Louisiana	yes	no
Maine	usually	no
Maryland	yes	yes
Massachusetts	yes	no
Michigan	yes	yes
Mississippi	yes	no

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[14] Florida Capital Facility Planning and Budgeting, First Annual Report, Executive Office of the Governor, March 1986, p.5.

[15] Texas Research League, op. cit., p. 99.

Montana	yes	yes
Nevada	yes	yes
New Jersey	yes	no
North Dakota	yes	no
Ohio	yes	no
Oklahoma	yes	no
Pennsylvania	no	no
South Carolina	yes	no
South Dakota	yes	no
Tennessee	yes	no
Virginia	yes	no
Washington	yes	no
Wisconsin	yes	no
Wyoming	yes	no

Source: Florida Budget Report.

Most of the state budgets appear to be limited in the information they include in the capital inventory. Few state capital budgets are designed to display alternatives and provide cost-effective assessments of the proposed investment strategy.[16] The Urban Institute reports that most do not include road and highway facilities owned by independent commissions, or grants to local governments for infrastructure development. Moreover, a recent report by the Southern Growth Policies Board observed that "despite the importance of maintenance, few state agencies analyze alternative maintenance strategies systematically."[17] The report explains that this is due in part to greater emphasis in many areas on new construction and also to the construction bias in most federal and state assistance.

States also appear to use the capital budget process as a means of identifying and controlling the amount of debt service owed in a given year, as well as projecting debt service costs into the future. According to the Urban Institute analysis, "Most states require that when departments submit project requests, they indicate what portion of the project will be financed through bonds. Thus, for a given year, the Budget Office should have the data needed to evaluate different project mixes for their impact on the state's debt."[18]

The assessment goes on to observe that it is unclear to what extent this information is actually used to measure future state borrowing needs and options.

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[16] Nesbary, D. and Yondorf, B., State Capital Budgeting and Finance, National Conference of State Legislatures, March 1986.

[17] Financing Economic Development in the South, 1986 Commission on the Future of the South, Southern Growth Policies Board, p. 15.

[18] Urban Institute, op. cit., p. 57.

Reviewing capital planning among agencies in Florida, a special Commission on Public Facility Financing, established in 1983, concluded, among other things, that:

> "Some few agencies do long-term planning for their own needs, but the great majority of facility requests address maintenance and repair backlogs and current needs. They are largely reactive; very few requests could be classified as anticipating."[19]

The Commission's critical analysis of the state planning and capital budget process led to the passage by the Florida legislature of the Capital Facilities Planning and Budgeting Act in 1984, giving the governor the responsibility of developing and implementing a comprehensive planning and budgeting process for the state's capital assets. The law requires the process be integrated with the state's financial planning and debt management activities, and with the long-range plans of state agencies, regional planning councils, and public benefit corporations.

The implementation of this process, together with the State and Regional Planning Act also passed in 1984, has the potential to give Florida one of the most complete and comprehensive capital management systems of any state in the nation. Among other features, the Florida system requires the development of state comprehensive plans for long-term infrastructure needs, the development of a CIP by each agency, and the development of a state CIP integrated into the operating and investment budget. In putting together the capital budget, the state is required to perform an analysis of alternative financing strategies for each identified need, including a review of financing techniques such as privatization, the use of innovative debt instruments, and such alternative revenue sources as user and impact fees and special assessment districts.

The new capital budgeting and planning process was initiated in 1985 and is still in its infancy in terms of development and implementation. Not surprisingly, one of the findings of the first year's experience with the process is that the backlogged need for maintenance, repair, and upgraded capacity is so huge there is little room in the budget for projects anticipating new demand. Consequently, "the agencies devote most of their efforts to dealing with current problems where the chances of successful funding are greater."[20]

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[19] Florida Capital Facility Planning and Budgeting. Executive Office of the Governor's Office of Planning and Budgeting, March 1986, p. 5.

[20] Ibid., p. 47.

Selecting Cost-Effective Solutions

A critical component of any effective capital planning and budgeting process is the capacity to make the most cost-effective decision in regard to public works investment. What is the optimal size of the facility? What cost-cutting innovations are available? Is repair and replacement and possible upgrading of existing facilities a viable option?

The capacity of the decision-makers to make informed choices between a realistic range of alternatives including, where appropriate, the selection of repair and rehabilitation of existing facility over new construction, is the essential indicator of whether a planning and budgeting process really works. The display of alternatives in this area is conditioned by such things as the adaptability of technological alternatives to standard public works facility requirements, the constraints of federal and state requirements for standardized compliance, and to some degree, the cautiousness of the public works profession in adopting new technologies to traditional areas of facility design and performance.

Overall, cost-effective decision making is a complicated area and not one on which the Panel focused intensely. Even so, testimony presented at its public hearings,[21] as well as an increasing amount of public and professional literature in this area, suggests that a hesitancy in the adoption of innovations in both the application of technological solutions and engineering techniques may be adding unnecessarily to the cost of furnishing public works facilities.

The National Council on Public Works Improvement observed in its first Annual Report that the technology of public works has changed very little in the past 50 years, noting that, "...the perception is widespread among industry representatives, professional engineering and trade associations and researchers that technological innovations in public works fields have lagged well behind those in defense, medicine, and space exploration."[22]

Various explanations are offered for this apparent resistance to innovation, including the inflexibility of governmental standards and the concerns of the designing and building profession for the liabilities associated with the failure of untried technologies.

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[21] Testimony of Mark Houck, School of Civil Engineering, Purdue University, before the Private Sector Advisory Panel on Infrastructure Financing, Indianapolis, May 19, 1986.

[22] National Council on Public Works, Defining the Issues, Sept. 15, 1986, p. IV-2.

In a recent policy statement resolving to support innovation in engineering, the American Society of Consulting Engineers observed that, "Currently, there are a number of obstacles which discourage innovation on a widespread scale. Civil engineers ... are under increasing pressure to be conservative in their judgment because of lawsuits, rules, regulations, legislation, standards, competitive bidding and a desire for predictability."[23]

Another explanation, which is true at least with respect to the wastewater treatment area, is that the availability of federal money for construction has skewed the local decision-making process toward the construction of more treatment capacity instead of improving the efficiency of existing capacity.

For example, studies demonstrate that reducing the infiltration and inflow into existing sewer pipes can dramatically reduce the amount of wastewater flow into the treatment plant and consequently free up treatment capacity, which in many cases obviates the need for new treatment works. However, the fact that grants have been available for building treatment works but not for improving sewer lines has caused some local governments to opt for building new plants.

A technique widely advanced as a means of reducing costs in the design and construction phase of a project is value engineering. Value engineering is a method of analyzing a product or service so that its functions can be performed at the lowest possible cost while still providing a quality product. Value engineering can substantially reduce costs in both project design and construction through such methods as selecting less costly materials, reducing the required overall space, and consolidating the structure more efficiently.

In wastewater treatment projects, where value engineering is applied to the design phase of projects in excess of $10 million dollars that are receiving a federal construction grant, EPA estimates millions of dollars in cost savings while GAO estimates that the broader application of value engineering to all project design and construction could potentially save $25 million to $57 million annually in EPA grant funds.[24] The broader application of this technique to all projects, however funded, would seem to have the potential for substantial cost savings.

The recently enacted Water Resources Development Act requires the application of value engineering assessments to all large Corps of Engineers projects.

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[23] American Society of Consulting Engineers Policy Statement, Adopted April 6, 1986.

[24] General Accounting Office, Greater Use of Value Engineering Has Potential to Save Millions, July 16, 1985.

Congress could encourage the broader utilization of these cost-saving techniques in conjunction with other federally assisted programs.

A comprehensive review of federal criteria, standards and regulations should be initiated to determine whether they facilitate the application of innovative and cost effective solutions, or inhibit them. This was a recommendation of the National Infrastructure Advisory Committee in its report to the Joint Economic Committee in 1984. Today it is even more relevant, as states and localities attempt to stretch limited resources to cover an expanding agenda of needs.

Conclusion

Far more emphasis needs to be placed on the selection of cost-effective solutions for public infrastructure needs. Limited financial resources make it imperative that state and local governments approach their investment options and make their decisions in the context of a comprehensive capital plan for infrastructure investment. Many states and localities are moving in this direction with the implementation of Capital Investment Plans, and while their application to the real realm of local political decision making and governmental operation is less than "text-book" perfect, it is a development that needs to be encouraged and strengthened.

Federal investment policies can contribute to the development of the CIP process by giving states and localities more flexibility in the application of federal assistance programs to local needs and by making state and local planning a condition of any new form of federal public works assistance.

Another way the federal government can contribute to the application of more cost effective solutions to local needs is through a comprehensive review of existing federal standards, criteria, and requirements associated with federal mandates and assistance programs to assure that they encourage, rather than frustrate, the application of innovative and cost effective solutions.

VI. FINDINGS AND RECOMMENDATIONS

The need for additional funds to build and maintain the nation's infrastructure facilities is well established. The shortfall in funds that will be required between now and the year 2000 has been estimated at $240 billion by the Congressional Budget Office. The Joint Economic Committee of the Congress has established the shortfall at $448 billion.

The Private Sector Advisory Panel on Infrastructure Financing did not attempt to assess these estimates or create its own. It was asked instead to study federal, state, and local responsibilities for funding infrastructure, identify new and innovative methods for financing public works facilities, and then recommend an appropriate federal response to what is clearly a major shortfall in funding for America's infrastructure.

The Panel finds that all three levels of government--local, state, and federal--must work in closer harmony to assure an adequate national infrastructure. Each has a role. In the past few years, these respective roles have changed significantly.

Traditional federal grant and assistance programs are declining or being phased out altogether. Increasing use is being made of user fees and excise taxes identified and dedicated for special purposes such as road and highway construction or other transportation facilities.

Water resource project beneficiaries are now required to pay more of the up-front planning and development costs. The availability of indirect federal assistance through preferred tax treatments for public purpose bond issues has been constrained by recent changes in the federal tax law.

For much of our nation's infrastructure, it is at the local level where needs must be quantified and resources identified and used efficiently. Local governments--cities, towns, counties, and special districts--are primarily responsible for constructing, operating, and maintaining infrastructure facilities for insuring a clean environment. They share with the states the responsibility for building and maintaining transportation facilities.

With federal requirements for environmental compliance increasing, the resulting burden on local budgets will increase. Faced with growing demands and diminishing resources, local governments have turned increasingly to comprehensive capital planning processes that attempt to define long-term capital needs, integrate them with budget priorities, and assess the impact of capital investments on operating budgets and on the revenue base.

As discussed in Chapter V, not all local governments have developed such programs, and many are rudimentary. Nevertheless, capital planning procedures are growing in use and in sophistication. These local planning and budgeting programs form the cornerstone of the solution to the infrastructure funding crisis.

States play a critical role in infrastructure developments, both in regard to facilities for which states have primary responsibility and in the assistance they provide to localities. While the federal government has retrenched, many states have moved into the breach with initiatives that assist their localities through loans, debt packaging, credit enhancements, increased grants, and the encouragement of private investment in public facilities and services.

The state role in financial planning and debt management has also taken on increasing importance. Several states have moved aggressively to improve state capital planning and budgeting as discussed in Chapter V. Several states have developed innovative capital financing mechanisms to help attract additional capital and provide for more efficient use of available funds, as discussed in Chapter II.

The resources of state governments in planning, budgeting, and debt management, and in assisting localities are also an important component of national infrastructure investment policy.

The federal government has a continuing responsibility in infrastructure which, as the backbone of interstate and international commerce, is critical to the economy. As a provider of safe drinking water, clean streams and rivers, and safe and sanitary disposal of domestic and industrial wastes, infrastructure is integral to the health and welfare of every American.

As the nation's economic vitality and the health and safety of its citizens rests on the quality of its infrastructure, it is incumbent on the federal government to assist in its financing.

The Panel's recommendations are based on the following conclusions reached in the course of its study.

CONCLUSIONS

- The continued productive capacity of the American economy depends on the availability of adequate basic public facilities. Rebuilding, revitalizing, and expanding America's public infrastructure is imperative to our future.

- America's need for more and better public facilities is a national issue that must be addressed nationally. Public works are not only essential for interstate and international commerce, they are essential for the health, safety, and general welfare of the American people.

- A significant federal role in building and rebuilding our nation's infrastructure is altogether appropriate. Since both the states and the local governments lack the capacity to address this need equitably and comprehensively, a revived federal involvement is essential.

- The federal contribution to infrastructure financing has declined. With the sole exception of outlays earmarked from motor fuel tax receipts in the Highway Trust Fund, federal infrastructure spending has diminished, with state and local interests bearing an increasing share of the burden.

- The financial responsibility for meeting America's infrastructure needs has fallen most heavily onto state and local governments. In six categories of public works investment--highways, water supply, wastewater treatment, aviation, mass transit, and water resources--annual federal spending recently was $25.5 billion, compared to non-federal annual spending of $63.6 billion.

- As the federal government shifted priorities away from infrastructure financing, new federal laws have mandated state and local compliance with new requirements for water pollution control, clean drinking water, and the clean-up of hazardous wastes. While essential for the public welfare, these new laws provided little in additional funding to assist in meeting the considerable cost of state and local compliance.

- States and localities have faced not only the federal shift in priorities but have had to contend with the "taxpayer revolt" which in many localities capped property taxes which are a primary source of revenue for local governments. To contend with the resulting revenue shortfall, local governments have increasingly turned to the bond market to borrow funds necessary to finance infrastructure facilities.

- Within the past decade, the annual volume of tax-exempt debt issued for public works rose from just over $6 billion in 1977 to four times that level. State and local governments turned to new forms of loans, debt packages, credit enhancements, and other forms of financing. User fees and other exactions also have become increasingly popular, and many localities are exploring the potential for public/private partnerships.

- Yet these initiatives have been insufficient. Demands for public facilities have continued to exceed the ability of state and local governments to respond. State and local governments lack the resources and the flexibility to shoulder the expanding burden of financing America's infrastructure needs. Compared to the dimensions of need for new and improved public facilities, state and local resources are insufficient.

- Infrastructure banks, revolving loan funds, and other innovative funding systems are being used effectively in a number of states. They offer the potential to become a major sustaining source of financial assistance for local infrastructure investments, when sufficiently capitalized.

- Over the years, the federal government has, through the federal tax code, encouraged investments in public works indirectly through the availability of tax-exempt municipal bonds, favorable depreciation allowances, and investment tax credits. Historically, this indirect federal contribution has provided a substantial and valid subsidy of state and local infrastructure financing.

- In recent years, however, increasingly severe restrictions on the use of tax-exempt bonds have made this form of infrastructure financing increasingly difficult. The tax-exempt bond provisions in the 1986 Tax Reform Act are even more restrictive. These provisions will reduce the volume of state and local debt financing, and make even traditional governmental bonds more difficult and more costly to issue.

- The new tax code thus complicates and confounds further efforts by state and local government to fill the breach in infrastructure financing.

- Increasing use of user fees to finance project costs, as well as for supporting adequate operations, maintenance, and repair budgets, is sound policy, and should be incorporated into project planning.

- Some of the newer mechanisms for raising special revenues, such as development exactions and impact fees, are effective in areas of rapid growth. These, however, hold limited appeal for areas of slower growth or declining economic base.

- Federal regulations and compliance standards may reduce local flexibility and constrain or frustrate the application of cost effective and innovative solutions to local infrastructure needs.

- The trend toward private investment in public works facilities and services should be encouraged through federal tax provisions and federal program implementation.

There should be a recommitment of federal funds to assist states and localities in meeting their most pressing needs, especially those resulting from federal mandates and requirements. New federal funding assistance should be advanced with the following objectives:

- Maximize flexibility in the application of the federal dollar to state and local problems in order to encourage local initiatives and the selection of the most cost effective investment solutions.

- Continue the emphasis on user fees and charges and the dedication of these revenues to trust funds for specific infrastructure purposes.

- Make timely appropriations of available federal dollars to coincide with state and local capital planning, budgeting and investment strategies, as well as seasonal construction schedules.

- Encourage the adoption and refinement of state and local capital investment plans, in conjunction with federal funding.

- Increase and extend the availability of the public dollar by the use of innovative financing arrangements that attract other public and private investments and provide sustaining sources of infrastructure funding for years to come.

- Hold down the cost of public borrowing by the broader application of tax-exempt financing to public purpose projects, and encourage private participation in the financing and management of public facilities and services.

Based on these findings, conclusions, and objectives, the Panel offers to the Senate Budget Committee the following recommendations, in order of their priority:

RECOMMENDATION ONE

CONGRESS SHOULD CREATE AN INFRASTRUCTURE TRUST FUND TO CAPITALIZE STATE BANKS AND REVOLVING LOAN FUNDS.

Legislation should be enacted to create an Infrastructure Trust Fund to distribute among the states $5 billion annually for each of five years. This money should be raised from a dedicated, broad-based new source of taxation, then placed in the Trust Fund for distribution on a formula that includes, among other factors, population and land area.

This federal Trust Fund contribution would go to recipient states, once they establish a revolving fund or infrastructure bank, to finance needed infrastructure facilities within the state. Contributions from the Trust Fund would provide 80 percent of the capital for each bank or fund; the state would be required to contribute the remaining 20 percent.

In the Panel's view, a Trust Fund is preferable to other possible forms of federal assistance, such as increased categorical grants. Properly structured, the state banks or funds would replenish themselves, serving as continuing sources of investment capital.

State infrastructure banks, which employ such funding mechanisms as revolving loan funds, bond pooling arrangements, credit enhancements, and guarantees have the potential to provide a substantial and continuous source of financing for state and local infrastructure development.

States would not be required to repay these Trust Fund grants. But to assure the revolving nature of the state funds or banks, local government would be required to repay at least the principal loaned to it.

Capital distributed to states could be incorporated in pre-existing or newly-established infrastructure banks. These banks would then make that capital available to subsidize, insure and retire debt, or for direct loans at below-market interest rates. Such assistance should be made available to finance highways, streets, roads, mass transit, wastewater treatment, solid waste disposal and water supply facilities.

The primary advantages of capitalizing state infrastructure banks, compared with other types of federal assistance such as increased categorical grant programs, include: the bank's ability to replenish itself, thus establishing a continuing source of investment capital; the bank's ability to leverage its initial equity to provide a larger volume of investment capital; and the flexibility it affords to the local governments in selecting funding priorities and making cost-effective investments.

Table 1 illustrates the continuing level of funds that would be available for investment if all the proposed initial capitalization were used to set up revolving loan funds. Note that under the assumption utilized in Table 1 to estimate the flow of funds, the $25 billion federal capitalization in state revolving funds loaned at an interest rate of 3 percent would result in $ 115 billion in projects financed after 30 years. Assets in these revolving loan funds nationally after 30 years, assuming no additional sources of capital, would allow for continued annual investments of approximately $ 5 billion.

Table 1

Aggregate Revolving Loan Funds ($ millions)

YEAR	BEGINNING CASH BALANCE	TOTAL FEDERAL OUTLAYS	TOTAL STATE OUTLAYS	PROJECT REPAYM'TS	INTEREST ON CASH	IFC FINANCING	END CASH BALANCE
1989	0	5000	1000	15	348	911	5331
1990	5331	5000	1000	122	564	3687	8088
1991	8088	5000	1000	412	627	6290	8474
1992	8474	5000	1000	838	654	6591	8891
1993	8891	5000	1000	1284	684	6915	9338
1994	9338	0	0	1737	367	6352	4484
1995	4484	0	0	2121	184	3948	2237
1996	2237	0	0	2349	156	1742	2394
1997	2394	0	0	2467	166	1865	2558
1998	2558	0	0	2594	177	1992	2732
1999	2732	0	0	2729	188	2127	2917
2000	2917	0	0	2874	201	2272	3115
2001	3115	0	0	3028	214	2426	3326
2002	3326	0	0	3193	228	2590	3551
2003	3551	0	0	3369	243	2766	3792
2004	3792	0	0	3557	258	2954	4050
2005	4050	0	0	3758	275	3154	4324
2006	4324	0	0	3973	294	3368	4618
2007	4618	0	0	4202	313	3596	4931
2008	4931	0	0	4446	334	3840	5265
2009	5265	0	0	4693	356	4106	5655
2010	5655	0	0	4865	377	4393	6004
2011	6004	0	0	4873	390	4644	6175
2012	6175	0	0	4760	390	4770	6160
2013	6160	0	0	4633	384	4765	6069
2014	6069	0	0	4496	375	4687	5911
2015	5911	0	0	4423	366	4579	5779
2016	5779	0	0	4501	364	4495	5807
2017	5807	0	0	4683	374	4522	6000
2018	6000	0	0	4861	389	4663	6245
TOTALS:	---	25000	5000	95855	10238	115010	---

Assumptions: 1) Capitalization over five years;
2) All capital is used for revolving loan funds;
3) Spendout of project financing is over 3 years (15 percent in year 1, 45 percent in year 2 and 40 percent in year 3).

The amount of capital generated in state revolving loan funds is highly dependent on the interest that is charged by the state. For example, the Panel estimates that such a program would produce $73 billion in infrastructure construction over 15 years, when assuming that the money will be loaned at 7-1/4 percent interest and repaid to the state over 20 years, then reloaned for additional work. Alternatively, if the same sum--$25 billion in federal grants plus $6.25 billion in state match--were loaned over 10 years, without interest, the program would generate $40.3 billion in new infrastructure work over 15 years.

Clearly, the sum available for construction will be contingent upon both the initial capital and the terms and conditions of loans, guarantees, or other forms of assistance. It must be underscored that America's infrastructure needs far exceed the scope of a program with these assumptions, one begun with $25 billion in new federal capital. But with careful management, these funds can be extended to meet needs for years to come.

To provide some perspective on the impact of such revolving loan funds, the following table shows what could be achieved under various levels of initial capitalization.

Column 1 provides the total federal and state capital invested over a five year period. Column 2 shows the level of investment after 30 years, with a 10-year period for initial loans, and a 20-year repayment schedule, at 8 percent interest. Column 3 shows the level of investment after the same 30 years, using a 15-year period for initial investment, and a 15-year repayment period, again at 8 percent. In both cases, repaid funds are reinvested.

Table 2

Level of Capitalization	Investment Level	Investment Level
$10 billion	$19.9 billion	$38.1 billion
$30 billion	$59.7 billion	$114.4 billion
$50 billion	$99.5 billion	$190.6 billion

These calculations, which assume that all the capital goes into state revolving loan funds, are strictly illustrative. Each state's experience would depend upon what mix of funding mechanisms and interest rates it chose to use. Activities other than loans undertaken by state bond banks could result in even greater leveraging, thereby increasing the level of infrastructure investment resulting from the initial capitalization.

These calculations also do not take into account local government or private sector funds. Therefore, these examples represent a very limited estimate of the impact of the federal/state capitalization. It is also clear that the funds do not stop at the thirtieth year, but provide construction funds for decades beyond.

Funds from each state revolving fund or infrastructure bank should be available for new construction, as well as for rehabilitation and major maintenance and repair of existing facilities.

The additional funds made available under this recommendation must be just that, additional funds. They must not be used to supplant existing levels of federal and/or non-federal investments in infrastructure. This is a program to reduce the huge backlog, not simply serve as a different source of funding for work that would be accomplished anyway.

Prior to funding, the state must establish one or more state infrastructure banks into which the federal and state funds will be deposited. The state should also provide the federal government with a plan to use the funds based on the state's need for facilities, and the state's capital planning and budgeting process. Priority should be given to funding projects for which there is no other available federal assistance.

Under this recommendation, no additional federal funds would be required following the fifth year, and the federal government would serve as a catalyst in responding to our national need for infrastructure financing, without adding permanently to the size of the federal bureaucracy.

The Panel recommends use of the following criteria for all infrastructure banks established or funded under this proposal:

1) States should require a capital investment plan from the local applicant;

2) Loans from the bank should require a local cost share;

3) Interest rates on loans should be determined by each state, but should include a provision for a reduction in interest costs for a higher local share of project costs;

4) To the degree practicable, user fees should be incorporated into project repayment and operations; and

5) To assure that funds are re-invested in the state in a timely manner, the term of project loans should not exceed 20 years.

RECOMMENDATION TWO

CONGRESS SHOULD CREATE A NEW CATEGORY OF TAX-EXEMPT BOND, AN INFRASTRUCTURE BOND.

With or without an Infrastructure Trust Fund to pump new cash into infrastructure, tax-exempt financing must continue to be available if state and local governments are to meet their infrastructure needs.

State and local governments rarely have the cash on hand to finance expensive infrastructure projects. Therefore, they have increasingly had to borrow to pay for needed public improvements. Total outstanding state and local debt in recent years has increased significantly, now totaling more than one-half trillion dollars. A major portion of this increase has been in "private activity" debt. Because abuses have occurred in some of these financings, Congress restricted the scope and availability of tax-exempt financing, placing, among other things, a statewide limitation or "cap" on allowable issues which provided some private benefits.

It is the view of the Panel, however, that Congress went too far in seeking to end these abuses. Limiting the availability of tax-exempt financing has resulted in penalizing those seeking to finance major capital projects for unmistakably public purposes.

The Panel has no wish to revisit the tax reform debate. But it maintains that there is, and has been for some time, a serious definitional problem in the rules relating to tax-exempt bonds and their classification of public or private purposes. Certain facilities are public in nature and should be treated as such, regardless of whether there is some private involvement in the services they provide.

Under the 1986 Tax Reform Act, vital bond issues for sewage treatment, solid waste disposal, and water supply facilities, among other legitimate public purposes, will often fall under the classification--and limits--of "private activity" bonds, in which case they will be included in the state's annual limitation or "cap" on private activity issues.

If they are above the annual cap imposed in the Act, they will no longer be tax-exempt issues. Thus, financing these necessary facilities becomes costlier to the issuer and to the users.

It is the Panel's view that a facility that serves the general public and is necessary for the public health and well-being is a governmental or public activity, no matter how the facility is financed or its services rendered. The involvement of the private sector in financing or providing a facility or service, or in purchasing a portion of the services providing by a public facility, does not change its public nature.

To correct this unintended result, the Panel recommends the creation of a new category of bonds, "infrastructure bonds," which would be excluded from the definition of "private activity" bonds under the federal tax code.

An infrastructure bond would be a state or local government bond of which 95 percent of the proceeds are used to finance infrastructure. Infrastructure would be defined as a sewage treatment, solid waste disposal, or water supply facility, whether publicly or privately owned or operated, if it provides a public service of that nature.

Issuers of infrastructure bonds should be allowed to retain reasonable investment earnings on such debt issues. The alternative is simply to increase the level of debt on local government, with higher local fees needed to repay the cost of that debt.

Infrastructure bonds would be specifically classified as governmental bonds under Section 103(a) of the tax code, rather than "private activity" bonds. Thus, they would not be subject to the volume cap or any of the restrictions that apply exclusively to private activity bonds. This proposal is designed not so much to improve the infrastructure funding situation, but to keep it from deteriorating further following the enactment of the Tax Reform Act of 1986. It is vitally important that tax-exempt bonds be available for environmental control facilities, many of which are mandated by federal law and requirement.

RECOMMENDATION THREE

PUBLIC/PRIVATE PARTNERSHIPS MUST BE ENCOURAGED IN INFRASTRUCTURE FINANCING.

Private investment in public facilities offers a sound opportunity to increase substantially the capital available for infrastructure investments.

In public/private partnerships, the private sector can develop, operate and in some cases own needed facilities in cooperation with local government.

These opportunities are most evident in projects such as water supply or sewage treatment. But low and slow rates of return on such facilities require an early and rapid tax write-off to maintain a sufficient flow of cash to attract private investment. A faster rate of depreciation under the federal tax law would encourage private investment and participation in the development of such projects.

While the federal government cannot dictate the degree to which state and local governments turn to private capital to meet their infrastructure needs, it can encourage public-private partnerships by making it easier for them to occur. The treatment accorded infrastructure investment by the federal tax code will help determine whether private funding of an infrastructure project is feasible economically.

In referring to "public-private partnerships," or what is popularly referred to as "privatization," the Panel does not mean the sale of federal assets, or the abdication of governmental responsibilities as a means of reducing government expenditures. Rather, the Panel seeks to encourage public-private partnerships in which the private sector supplies capital and expertise to provide a particular service, but the state or local government retains overall responsibility.

The Federal Environmental Protection Agency has specifically advocated private involvement in the development of wastewater treatment. In November 1986, the agency sponsored a national conference on innovations in financing water facilities, including privatization as a major topic.

The Department of Transportation has established an Office of Private Sector Initiatives. Its task is to encourage local agencies to explore public/private partnerships, to gain acceptance for this financing method, and to coordinate privatization initiatives. Measures such as these should be adopted by other appropriate offices in the Executive Branch.

Before the enactment of the Tax Reform act of 1986, sewage treatment, solid waste disposal, and water supply facilities were placed in the 5-year class of accelerated cost recovery (ACRS). If bond-financed, the facilities retained the 5-year writeoff, although the straight-line method, rather that the 150 percent declining balance method was used. The rapid writeoff allowed by 5-year ACRS treatment was a significant factor in attracting the private sector to provide capital for these facilities.

The Tax Reform Act of 1986 placed solid waste facilities in the 7-year ACRS class, with a 200 percent declining balance. Sewage treatment facilities, however, were moved into a 15-year class, with a 150 percent declining balance, and sewage pipes and water supply facilities were moved into a 20-year class, also using the 150 percent declining balance method.

If these facilities are financed with tax-exempt bonds, they must be depreciated over their assumed lives, using a straight-line method. This would be 10 years for solid waste, 24 years for sewage treatment facilities, and 50 years for sewer pipes and water supply facilities. The allowable recovery periods for sewage treatment and water supply facilities are simply too long to attract reasonable levels of private sector investment.

As explained in Chapter IV, the low and lengthy rate of return associated with the facilities requires a rapid writeoff in the early years of the investment in order to maintain a sufficient cash flow to make it economically feasible.

Sewage treatment and water supply facilities should receive the same tax treatment now accorded to solid waste disposal facilities, which is in the 7 year accelerated cost recovery system and 10 years if bond financed. There is an urgent and equal public need for each of these three types of facilities that may not be met without some private investment. Sound public policy dictates that these three types of facilities be treated alike under both the ACRS system and the alternative system for bond-financed property.

In addition, federal executive departments and agencies should follow the example of the Environmental Protection Agency and the Department of Transportation by actively promoting and facilitating public/private partnerships.

A federal clearinghouse on private initiatives should also be established to coordinate and distribute information on such topics as state privatization statutes, initiatives undertaken by various state and local governments, ways that these governments have found of solving problems that commonly arise with privatization, and the federal requirements governing such initiatives. Such a clearinghouse would prove useful both in encouraging public/private partnerships and to improve the quality of the projects undertaken.

RECOMMENDATION FOUR

FEDERAL TECHNICAL SUPPORT SHOULD BE EMPHASIZED FOR ALL AREAS OF INFRASTRUCTURE DEVELOPMENT.

Whatever new financing initiatives are undertaken by the federal government, whether in response to these Panel recommendations or other proposals, state and local governments will continue to carry the principal responsibility for building most public works.

Adequately funded, state and local governments can fulfill this responsibility. They can achieve it with greatest efficiency, if provided additional technical support from the federal government. This support will be particularly valuable at the local level.

In the administration of various categorical grant programs, federal agencies have accumulated vast technical experience and expertise. Whenever any of these grant programs wanes, there is the danger that this expertise may be lost. This must not happen. New emphasis should be given to make this federal experience and expertise available to state and local governments.

In this way, non-federal officials should be able to make better decisions on design, development, operation, maintenance, and other aspects of building and rebuilding needed public facilities.

RECOMMENDATION FIVE

EXISTING FEDERAL TRUST FUNDS FOR INFRASTRUCTURE MUST BE PRESERVED AS AN ESSENTIAL FEDERAL COMPONENT FOR CONSTRUCTING INFRASTRUCTURE.

The existing highway, airport, and waterway trust funds help to assure a more stable and reliable level of funding for certain infrastructure purposes. As devices for revenue collection and allocation, dedicated trust funds are very effective. They promote better planning, management, and budgeting at the state and local level.

The utility of trust funds to assist state and local capital investment planning is best served when disbursements are dependable and timely, and Congress should act promptly on scheduled reauthorizations and annual appropriations.

RECOMMENDATION SIX

FEDERAL AGENCIES SHOULD REVIEW EXISTING STANDARDS AND REGULATIONS RELATED TO INFRASTRUCTURE PROGRAMS.

A review of federal regulations is needed to assure that the standards and regulations permit and encourage cost-effective solutions, plus innovations in design, technology, and response, and in no way frustrate or discourage non-federal initiatives.

In particular, a thorough review is needed of federal compliance standards to assure that life-cycle cost analysis is encouraged, that new investment is not advanced at the expense of efficient operations of existing facilities, and that innovative techniques with the promise of superior performance obtain every opportunity to demonstrate their value.

APPENDIX A
FINANCIAL TERMINOLOGY

Components of Tax-exempt Issues

A **Call** provision gives the issuer the option to retire all or part of an issue at a set price prior to maturity. It is useful to the issuer because it allows refinancing of an old issue if interest rates fall. A call can, however, be a costly surprise to the holder, and bonds with such a provision will in general bear a higher rate of interest.

A **Put** option is the opposite of a call option. It gives the holder the option to sell back (or "put") the issue to the trustee at a specified price, within a specified time period or at a specific time under specific conditions. The put option is primarily intended to afford the bondholder protection against market fluctuations. It generally serves to reduce the issuer's borrowing costs because investors accept a lower interest rate in return for the put option. However, the issuer risks facing liquidity problems if a large number of puts are exercised simultaneously.

A **Warrant** is a special certificate attached to a bond giving the holder the right to purchase a security at a stipulated price, either for a specified period of time or perpetually. This allows the bond to carry a lower interest rate as the investor places value on the ability to purchase bonds at a set price that may be lower than the market price in the future. Once detached from the bond, a warrant has the same characteristics as a call option.

Short-term Instruments

Bond Anticipation Notes (BAN) are notes issued by public agencies to obtain temporary financing for projects that will eventually be financed on a long-term basis (and the BAN repaid) through the sale of bonds.

Grant Anticipation Notes (GAN) are issued by public agencies to obtain temporary project financing while awaiting receipt of permanent funding through governmental grants. The GAN is paid from grant proceeds.

Tax-Exempt Commercial Paper (TECP) is an unsecured debt obligation with a maturity of substantially less than one year, the proceeds of which are used to support current operations or interim financing of permanent capital improvements. TECP is usually backed by a letter of credit. Since its inception in 1980, the market for TECP has grown rapidly from $50 million to $9 billion in 1985.

Long-term Instruments

Deep Discount Bonds either bear no interest payable periodically or bear interest at a rate which is well below market and accordingly are priced for sale at a substantial discount from their face value so that their yield to maturity (which takes into account the discount) approximates the market rate.

Drop Lock Bonds are floating rate put option bonds. The interest rate is tied to short-term indices with provision for the interest rate to become fixed if certain money market conditions (based on a long-term interest rate index) are achieved. If the interest rate can be converted to a fixed interest rate at the option of the issuer, the floating rate put option bonds are called "Saddle Bonds."

Fixed Interest Rate Put Option Bonds bear interest at a rate initially fixed for the period a letter of credit is outstanding (normally 10 years). The bondholder has an option to put or tender the bonds back to the issuer upon the date of expiration of the letter of credit, at which time the interest rate is converted to a new fixed rate. If the put is exercised, the bonds are purchased and remarketed (or canceled at the option of the issuer).

Floating Rate Bonds bear an interest rate pegged to a specific market interest rate. The floating rate shifts the risk of changes in the interest rate from the lender to the borrower. Adjustments in the rate paid on the issue are made periodically. Overall, the shift of the interest rate risk allows the issuer to obtain more favorable financing rates.

Limited Tax Bond is secured by a pledge of a tax or category of taxes limited as to rate or amount.

Mandatory Take Bonds are bonds which the bondholder is required to sell and the issuer is required to purchase upon expiration of a letter of credit. The terms and conditions of the bonds automatically adjust and the bonds are either remarketed or retired.

Option Bonds permit the holder to tender at specified times to the issuer in return for payment of the principal thereof. Typically, a bank, pension fund or other entity will provide resources by agreement with the issuer in the event that more bonds are tendered than the issuer has funds to pay for.

Option Take Bonds permit the issuer to take them back before the expiration of the letter of credit by demanding that they be surrendered for purchase. The interest rate is initially fixed for the period the letter of credit is outstanding. Upon exercise of the take option, the terms and conditions of the bonds (interest rate and call features) adjust to the market based on pre-established criteria, and the bonds are remarketed. If the takedown is not exercised, the terms and conditions automatically adjust upon expiration of the letter of credit and the bondholder has the option to put or is required to surrender the bonds for purchase. Any purchased bonds are then canceled.

Put Bond contains provisions giving the holder the option to tender (or "put") the bond to the trustee for purchase at a specified price, within a specified time period and under specified conditions. The option is intended to afford the bondholders protection against market price fluctuations and, at times, other risks and may be used to give the bondholders an effective means of accelerating bond payment even in the absence of an event of default. Funds to pay for the tendered bonds may be made available from draws on a letter of credit.

Serial Bonds are issues stated to mature annually or, in some cases, semi-annually over a number of years.

Special Assessment Bond is payable from the proceeds of assessments imposed against properties which have been specially benefited by the construction of public improvements such as water, sewer, transportation and irrigation systems.

Special Tax Bond is secured by a special tax, such as a gasoline tax.

Stepped Coupon Bonds are coupon bonds, all of which in a given issue will bear the same rate of interest in any one year, although they mature serially. The rate of interest will increase, in some cases as often as each year.

Term Bonds are bonds of an issue that have a single stated maturity date. Serial bonds and term bonds are often combined in one issue.

Variable Rate Demand Bond bears an interest rate which floats based on a short-term interest rate index. The bondholder has the right, upon notice, to demand that the bond be purchased (or redeemed) by the issuer. The Put is normally backed by a letter of credit. Bonds are remarketed after the put at the floating rate unless the letter of credit expires or is not renewed (or replaced). A conversion option may may be offered under which the bond is converted to a fixed rate based on an index tied to the remaining term of the bond.

Variable Rate Demand Notes (VRDN) usually have a maturity of two to three years. The interest rate is adjusted at predetermined times based on a specific market index. Such notes typically include a minimum interest rate to protect the investor and a maximum rate to protect the issuer. In addition, VRDNs include a "put" option which enables the investor to tender the issue at "par" (the principal amount due at maturity) prior to maturity. This ensures the bond will be marketable even during times of declining interest rates.

Zero Coupon Bonds (ZCB) are sold at a discount of par and pay no interest until maturity, when the investor receives the par amount. Changes in the purchase price dictate the effective rate of interest. The key attraction of ZCBs is that reinvestment risk is eliminated. A standard bond pays coupons at specific rates which the investor must then reinvest, assuming the risk of short term interest rate fluctuations. A ZCB, however, effectively reinvests the coupon at the original issue rate. The issuer can, therefore, sell ZCBs at a lower interest rate and simultaneously reduce management costs for the issue because of elimination of coupon handling.

Tax Increment Financing

In recent years, many local governments have turned to tax increment financing ("TIF") as a means of financing public improvements without imposing new taxes or other charges. Tax increment financing began in California in the early 1950's and is now authorized in 37 states.

Tax increment financing is used mainly for the redevelopment of locally designated blighted areas (DBAs). Essentially, it is a device to direct capital to the redevelopment of an area with little prospect for private investment.

Under TIF, redevelopment of the area is financed through the increase in property tax and other tax revenues expected to be generated by redevelopment. In essence, each jurisdiction with taxing power over the area agrees to forego the incremental revenue to which it would otherwise be entitled. For example, if annual property tax receipts from the designated area are $1 million before redevelopment and will be $3 million afterwards, the $2 million difference is devoted to financing the costs of redevelopment.

Under most state laws, the local government must make a finding that redevelopment is necessary, prepare a redevelopment plan, and submit the plan at a public hearing. The DBA must meet various requirements relating to size and composition. Some state laws exempt specific jurisdictions, such as school districts.

Financing for TIF's can occur on a "pay as you go" basis using tax increments each year as they are collected, or more commonly, revenue can be generated up front through the issuance of a TIF bond whose payment is secured by the incremental tax receipts and in some cases by a portion of general tax receipts.

The proceeds of TIF are used by the local government to acquire land in the designated area, demolish buildings and otherwise clear the land, relocate the current occupants, and prepare the land for eventual resale to a private developer. They may also pay for public improvements such as roads, sewers, and sidewalks.

In the past, TIF bonds have been treated as governmental bonds rather than IDB's because they are secured by local tax revenues or other governmental obligation. However, the Tax Reform Act of 1986 re-classifies TIFs as private activity bonds. A new tax-exempt category, the qualified redevelopment bond (QRB) has been created; and a TIF must qualify for this category in order to be tax-exempt. A QRB is defined as a bond 95% of the proceeds of which are to be used for redevelopment purposes in a locally designated blighted area (DBA) and the debt service on which is primarily secured by general taxes or by a pledge of incremental property tax revenues.

QRBs are subject to the volume cap and other restrictions applicable to private activity bonds. Additionally, several requirements must be met for a QRB to qualify for tax exemption. They must be issued pursuant to state law and local government authorization; and the state statutory criteria must take numerous factors into account.

Both the maximum value and minimum size of DBAs are strictly limited. The value of all real property in a city's DBAs can equal no more than 20% of the assessed value of all real property within the city. Each DBA must consist of no less than 100 compact and contiguous acres, or 10-100 compact and contiguous acres with no more than 25% of the land in the area made available to any one person or persons. Taxes within the DBAs must be imposed at the same rates as in comparable areas, and no charges may be imposed on owners or users of property within the DBAs that are not imposed on those in comparable areas.

Proceeds of QRBs may be used to acquire and rehabilitate real property, clear and prepare land for redevelopment, and relocate occupants of the property. They may not be used to construct or enlarge existing buildings, although this may be done through other types of tax-exempt financing such as multifamily housing bonds. Given the new restrictions, especially the constraints posed by the volume cap, it is uncertain whether TIF financing will continue to be as useful a tool as it has been in the past.

APPENDIX B

COMPARISON OF INFRASTRUCTURE-RELATED TAX-EXEMPT BOND PROVISIONS BEFORE AND AFTER THE TAX REFORM ACT OF 1986

Provision	Prior Law	Current Law
General classification	A bond was classified as an IDB if more than 25% of the proceeds were used by a trade or business and more than 25% of the debt service on the bond was derived from or secured by a trade or business.	A bond is classified as a private activity bond using the same test, except that the limit is lowered to 10% (or $15 million, if less, for output facilities) and indirect security interest is counted. Private use exceeding 5% must be related to a governmental use that is also being financed with the bonds.
	Bond was classified as a private loan bond if more than 5% of the proceeds were used to make or finance loans to persons other than state and local governments or 501(c)(3) organizations.	Bond is classified as a private loan bond if more than the lesser of 5% or $5 million is used to make or finance loans to persons other than state and local governments.
Exemption for certain private activity bonds		
Exempt facility IDBs	IDBs for airports, docks and wharves; mass commuting facilities; sewage treatment facilities; solid waste disposal facilities; water supply facilities; multifamily rental housing; sports facilities; convention and trade show facilities; parking facil-	IDBs for sports facilities, convention and trade show facilities, parking facilities (unless part of an eligible airport, port, or mass commuting facility), and pollution control facilities are no longer tax-exempt.

	ities; electric and gas facilities; hydroelectric facilities (if an application was docketed with FERC before January 1, 1986); local district heating and cooling facilities; and pollution control facilities were tax-exempt.	Prior law is retained for hydroelectric facilities with clarification that application for license rather than preliminary permit must be filed before 1986. IDBs for the other facilities listed remain tax-exempt, subject to the governmental ownership requirements discussed below. IDBs for facilities to entomb or incinerate hazardous waste (but not radioactive waste) are also be tax-exempt. Facilities must be for use by general public rather than generator of waste.
Other IDBs	An exemption was also provided for industrial park IDBs, and for small-issue IDBS until December 31, 1986 (December 31, 1988 for manufacturing facilities).	Industrial park IDBs are no longer tax-exempt. The expiration dates for small-issue IDBs are retained, except that bonds for farmland are treated as manufacturing facilities. In addition, a tax exemption is provided for qualified redevelopment bonds, i.e., bonds 95% of the proceeds of which are to be used for redevelopment purposes in a locally designated blighted area and the debt service on which is secured primarily be general taxes or by a pledge of incremental property tax revenues.

501(c)(3) bonds	Bonds whose proceeds were used by 501(c)(3) organizations were tax-exempt and generally subject to requirements similar to those for governmental bonds.	501(c)(3) bonds remain tax-exempt but in general are treated as private activity bonds.
Private loan bonds	Qualified mortgage revenue bonds, veterans' mortgage bonds, and student loan bonds issued in connection with the federal GSL or PLUS programs were tax-exempt.	The exemptions for these bonds are continued, subject to new restrictions as outlined below.
Private ownership and management of exempt facilities	All exempt facilities were eligible for tax-exempt IDBs whether publicly or privately owned or managed. If a water facility was privately managed, rates had to be established or approved by the state or local government, by a federal agency, or by a public service or public utility commission.	Airports, docks and wharves, and mass commuting facilities must be governmentally owned to receive IDB financing. Safe harbor rule treats property as owned by government if lessee makes election not to claim depreciation or ITC, lease term is not more than 80% of property's useful life, and lease has no option to purchase property at other than fair market value. Rule for water facilities is retained.
	Private management of a publicly owned facility might be counted as a trade or business use unless the management services were provided for a flat fee under a contract not exceeding 5 years, with the exempt owner having option to renew at end of any 2-year period. For newly operational facilities, compensation could be based on percentage of gross profits for up to one year.	Management contract of no more than 5 years will not be considered trade or business use if 1) compensation is not based on a share of net profits, 2) the public owner may terminate at the end of any 3-year period, and 3) at least 50% payments are on a fixed-fee basis.

Restrictions on transportation facilities	IDBs could be used to finance airports, docks and and wharves, and mass commuting facilities, along with related storage and training facilities. Airports included runways, terminals, and other public facilities, as well as functionally related airport hotels and commercial facilities, hangars, and certain other property not used directly by the general public.	IDBs for airports, docks and wharves, and mass commuting facilities cannot be used to finance certain facilities if they are used in a trade or business use: 1) airport hotels or other lodging facilities; 2) retail facilities (including food and beverage) in terminal that are of a size greater than that needed to serve passengers and employees; 3) retail facilities for passengers and general public located outside terminal (including but not limited to rental car lots); 4) office buildings for anyone other than employees of the local government or authority; and 5) industrial parks or manufacturing facilities.
Restrictions on IDBs for multifamily rental housing	At least 25% of housing units (20% in targeted areas) had to be occupied by individuals whose income did not exceed 80% of the area median, with adjustments for family size, when they first occupied the unit. Requirement had to be satisfied for the longer of 10 years or 50% of the term of the bonds for the project having the longest maturity.	Bond-financed projects must meet one of two requirements: at least 40% of units must be occupied by tenants with 60% or less of area median gross income, or at least 20% must be occupied by tenants with 50% or less of area median gross income. Existing low-income tenants will continue to count as long as their income does not increase above 140%

		of the income qualifying as low-income for the project. The project must satisfy the requirements for the longer of 15 years after 50% of the units are occupied; the first day on which no bonds are outstanding; or the date on which any Section 8 assistance terminates. A special rule is provided for "rent skewed" projects which elect stricter targeting requirements: 15% of units occupied by tenants with 40% of area median and average rent charged market rate tenants is at least 300% of that charged low-income tenants. Increases in qualifying tenant's income of up to 170%, rather than 140%, are allowed, only next available unit must be rented to tenant meeting the 40% requirement.
Restrictions on qualified redevelopment bonds	No provision.	**Security:** Security on QRBs must be by payments that would render the bonds IDBs under the 10% security interest test. Pledged tax revenues must be primary security. Taxes in designated areas must be imposed at same rates as in comparable areas, and no charges may be imposed on owners or users of property in

designated blighted area (DBA) to which owners or users of comparable property are not subject.

Use of proceeds: QRB proceeds may be used 1) to acquire real property in DBA if acquiring government has power of eminent domain, 2) to clear and prepare land in DBA for redevelopment, 3) to rehabilitate the real property in the DBA acquired or owned by the government, and 4) to relocate occupants of acquired real property. If real property is transferred to a nongovernmental person, it must be for fair market value. QRBs may not be used to construct new buildings or other property, nor to enlarge existing buildings.

Designation of DBAs: QRBs must be issued pursuant to state law authorizing such issuance and authorization by local government. Designation must be by state statutory criteria which take into account all relevant factors. There must be an affirmative finding of substantial presence of the factors. The local government's aggregated DBAs may not contain real property whose assessed value exceeds 20% of assessed value of all real property within the jurisdiction. Each DBA must either be comprised of at least 100 compact and contiguous units or be comprised of 25-100 compact and contiguous units with no more than 25% of bond-financed land in the area provided to any one person or related persons.

Private activity bond restrictions: QRBs are generally subject to the private activity bond restrictions, except for the limit on use of bond proceeds to acquire land. The targeting rules for mortgage and multifamily housing bonds do not apply to housing constructed or rehabilitated on land financed with QRBs (such housing cannot be financed with QRBs, however). No more than 25% of proceeds of QRBs may be used to finance certain facilities or land on which facilities are located: facilities providing retail food and beverage service, or recreation or entertainment; tennis clubs, skating facilities, racquet sport facilities, airplanes, skyboxes or other luxury

		boxes, or health club facilities. In addition, no proceeds may be used to finance private or commercial golf courses, country clubs, massage parlors, hot tub and suntan facilities, racetracks or other facilities primarily for gambling, or liquor stores.
Restrictions on 501(c)(3) bonds	Generally received the same treatment as governmental bonds. Bonds were not tax-exempt if more than 25% of proceeds were used in trade or business unrelated to organization's exempt purpose and security interest test was met.	In order for bond to be tax-exempt, 95% of proceeds must be used by a 501(c)(3) organization or governmental unit. Bond is not a qualified 501(c)(3) bond if it would be taxable if 501(c)(3) organizations were treated as governmental units and the 10% private business use and security interest tests were lowered to 5%. As under prior law, use in unrelated trade or business is a private use. Composite issues consisting of both governmental financing and 501(c)(3) financing will qualify for tax exemption as long as both the governmental and the 501(c)(3) components satisfy the requirements for their respective type of bond. All property financed with 501(c)(3) bonds must be owned by a 501(c)(3) organiza-

		tion or a governmental unit. Each 501(c)(3) organization is limited to $150 million in outstanding non-hospital bonds (only qualified 501(c)(3) bonds count; refundings do not count if they do not exceed outstanding amount of refunded bonds). If an issue is to be used only partly for hospitals, the hospital portion is exempt from the limit. Mixed-use facilities (e.g., a laboratory serving both a hospital and private physicians' offices) may be treated as hospital bonds to the extent of proportionate use for inpatient hospital services. 501(c)(3) organizations may elect to treat bonds as exempt facility or qualified redevelopment bonds rather than 501(c)(3) bonds if they are subjected to the volume cap.
Restrictions on mortgage revenue bonds	All lendable proceeds had to be used to finance mortgages on single family owner occupied residences. 90% of proceeds (0% in targeted areas) had to finance mortgages for first-time homebuyers. Purchase price of homes could not exceed 110% of area average (120% in targeted areas). Issuers had to submit to Treasury annual reports	95% of net proceeds of each issue, without regard to issuance costs must be used to finance mortgages to first-time homebuyers. The exemption for targeted areas is retained. The purchase price may not exceed 90% area average (110% in targeted

	of policies on use of proceeds. States could issue mortgage credit certificates with same targeting requirements in lieu of all or part of MRB authority; amount of MCCs issued could not exceed 20% of the exchanged MRB authority.	areas). All financing must be provided to borrowers whose family income does not exceed 115% of higher of area or state median. In targeted areas 1/3 of financing is exempt from the family income limit; for the remainder a 140% limit applies. The reporting and policy statement requirements are repealed. MCCs are continued, under new MRB targeting rules and a 25% exchange limit.
Restrictions on veterans' mortgage bonds	90% of proceeds had to be used to finance loans to veterans for purchase of single family owner occupied homes. Limited to 5 states issuing VMBs before June 22, 1984. Applicable only to veterans leaving active duty before 1977 and applying for loan within 30 years after leaving active service.	95% of proceeds must be used to finance loans to veterans. In order to be excluded from volume cap current refundings of VMBs may not exceed the outstanding amount of refunded bonds. Last maturity date of refunding bonds may be no later than 32 years from date of issuance of refunded bonds (or original bonds in series of refundings).
Restrictions on student loan bonds	Bonds could only be issued in connection with federal Guaranteed Student Loan (GSL) and Parents' Loan for Undergraduates (PLUS) programs.	Exemption is expanded to include certain state supplemental student loan programs. 90% of proceeds must be used to finance student loans for bonds issued in connection with federal programs; 95% for state programs. Student borrower must be resident of issuing state or enrolled

		in an educational institution within the state. Where two or more states use a portion of a state's volume cap in a single student loan issue, the limit applies separately to each state's share.
Volume cap	Separate volume caps were placed on IDBs and student loan bonds; mortgage revenue bonds; and veterans' mortgage bonds. The IDB cap was the greater of $150 per capita or $200 million. Bonds for 501(c)(3) facilities, multifamily rental housing, and governmentally owned airports, docks and wharves were excluded from the cap. No portion of governmental or advance refunding bonds was included in the cap. Volume was allocated half to state and half to local governments in proportion to population (a special allocation was provided for constitutional home rule cities), unless it was changed by state statute or by the proclamation of the governor in the interim period before the state legislature met. Unused bond volume could be carried forward for up to 3 years for specified projects. Cap for mortgage revenue bonds was the greater of $200 million or 9% of average annual aggregage principal amount of mortgages executed during previous 3 years for single family owner occupied residences located in the state.	All private activity bonds except veterans' mortgage bonds, 501 (c)(3) bonds, and and bonds for governmentally owned airports, docks and wharves, and solid waste disposal facilities are under one volume cap. The cap is the greater of $75 per capita or $250 million in 1987 and $50 per capita or $150 million thereafter. The nongovernmental portion of a governmental or advance refunding bond which exceeds $15 million is included in the cap. The same allocation rules apply. Volume cannot be allocated to facilities outside state, except for state's share of a sewage, solid waste, hazardous waste, or water supply facility. 3-year carryforward for specified projects remains available.

	Cap for veterans' mortgage bonds equalled the aggregate number of VMBs issued by the state between January 1, 1979 and June 22, 1984, divided by number of calendar years (not over 5) between 1979 and 1985 that state issued VMBs.	Prior law is retained for veterans' mortgage bonds.
Spending of proceeds	At least 90% of the proceeds of an IDB had to be spent on bond's exempt purpose. In the case of exempt-activity IDBs, all property that was "functionally related and subordinate to" the exempt activity could be financed with the proceeds and counts towards the 90% test. At least 85% of proceeds of a student loan bond had to be used to make or finance student loans. All lendable proceeds of mortgage revenue bonds had to be used to make mortgage loans; 90% to first time homebuyers. At least 75% of the proceeds of 501(c)(3) bonds had to be used to finance exempt activities of the organization. In determining use of proceeds, amounts invested in a reasonably required reserve or replacement fund and amounts used to pay costs of issuance were disregarded.	At least 95% of net proceeds of all private activity bonds except student loan bonds connected with GSL and PLUS programs (90%) must be spent on the bond's exempt purpose. "Net proceeds" equals proceeds minus amounts placed in reasonably required reserve or replacement fund. Costs of issuance do not count towards the 95%, and no more than 2% of bond proceeds may be spent on issuance costs. "Issuance costs" are defined very broadly. The "functionally related and subordinate" test is retained, except office space financed with exempt-facility bonds is limited to office space located at the exempt facility and of a size necessary for its day-to-day operations (as opposed to an administrative office building).

Other restrictions and requirements applying to private activity bonds		
Restriction on maturity	The weighted average maturity of IDBs could not exceed 120% of the reasonably expected economic life of the bond-financed property. ADR midpoints could be used as a safe harbor; or for real property, 50 years.	Restriction is extended to 501(c)(3) bonds (with an exception for mortgage loans insured under certain FHA programs) as well as IDBs, but not to other private activity bonds. For pooled 501(c)(3) financings, the rule is applied loan-by-loan rather than property-by-property. The safe harbor for land is 30 years.
Acquisition of land and existing facilities	No more than 25% of the proceeds of an IDB could be used to purchase nonagricultural land. None could be used to purchase an existing facility unless at least 15% of the acquisition cost was spent on rehabilitation. No portion of the proceeds of an exempt facility, industrial park or small issue IDB could be used to provide an airplane, skybox or other private luxury box, health club facility, gambling facility or liquor store (additional facility restrictions applied to small-issue IDBs).	Same as prior law, except restrictions on specific facilities (not including) small issue restrictions) are extended to all private activity bonds . The health club facility restriction does not apply to 501(c)(3) bonds if the facility is directly used for the 501(c)(3) organization's exempt purpose.
Public approval requirement	IDBs could be issued only after the issuer held a public hearing and the bonds were approved by an elected official. Alternatively, the issue could be approved by voter referendum.	The requirement is extended to all private activity bonds.

Substantial user restriction	Interest on IDBs was taxable during any period when the bonds were held by a substantial user (or any related person) of the bond-financed facilities.	Prior law is retained.
Change in use	A change in use of a bond-financed facility from a use qualifying the bond for a tax exemption to a nonqualifying use might result in loss of tax exemption. In some cases the loss would be retroactive.	In addition to any loss of tax exemption a change in use of a property financed with tax-exempt bonds to a use not qualifying for tax-exempt financing generally will result in loss of deductions for rent, interest, or equivalent amount by the person using the property in the nonqualifying manner. 501(c)(3) organizations will realize unrelated business income with respect to the use.
Arbitrage		
General profit restrictions	If proceeds of any tax-exempt bond were reasonably expected to be invested in securities with a materially higher yield, the bond was taxable. Amount of arbitrage permitted depended on whether obligations invested in were related to the exempt purpose of the issue ("acquired purpose obligations") or were unrelated ("acquired nonpurpose obligations") and whether the issuer elected to forego unlimited arbitrage during a temporary period. If temporary unlimited arbitrage was foregone, arbitrage of up to .5 percentage points	Restriction is expanded to include investment in annuity contracts and other property held for investment. Clarification provided that reasonable expectation test does not protect intentional acts to create arbitrage. Option to forego temporary period of unlimited arbitrage in exchange for higher permitted earnings is repealed.

	was allowed on acquired purpose obligations. In all other cases arbitrage was limited to .0125 percentage points. Special rules applied to mortgage revenue bonds and student loan bonds (see below).	
	Exception was made for:	Same, but:
	1) investments for a temporary period (up to 3 years) prior to use for purpose of issue, and	1) Pooled refundings (other than mortgage revenue bonds and student loan bonds issued before January 1, 1989) are limited to a 6-month initial temporary period and a 3-month period for repayments to pools that will be re-lent.
	2) investments not exceeding a minor portion (15%) of the proceeds (reasonably required reserve fund fund most important use).	2) Minor portion is limited to lesser of 5% of proceeds or $100,000, not counting the reserve fund. Reserve fund is limited to 10% of proceeds, unless Treasury determines a larger amount is necessary.
Determination of bond yield	Bond yield was determined after deducting costs of of issuance.	Costs of issuance may not be deducted in determining bond yield. Credit enhancement fees are treated as interest rather than issuance cost to extent they represent a charge for transfer of credit risk.

Restrictions and rebate requirements for nongovernmental bonds	Gross earnings on investment of proceeds of any IDB issue (other than multifamily housing) in nonpurpose obligations had to be rebated to the federal government, unless all bond proceeds were spent for the exempt purpose within 6 months of issuance or were put in debt service funds earning less than $100,000 in a bond year. Bond yield was determined without reference to issuance costs. 90% of the rebate required was to be paid in five years; the rest within 30 days of retirement of the issue. Failure to rebate as required made the bonds taxable as of the date of the issue.	Rebate requirement is extended to all tax-exempt bonds, except mortgage revenue bonds, which continue under their prior rules, and GSL and PLUS student loan bonds issued before January 1, 1989. An exception is provided for bonds to finance activities of or facilities for governmental units with general taxing power if all bonds issued by or on behalf of the unit in the year of issue are not reasonably expected to exceed $5 million. A safe harbor is provided for determining when proceeds of tax and revenue anticipation notes are treated as expended for arbitrage purposes (if cumulative cash flow deficit at end of 6 months exceeds 90% of issue size). In the case of governmental and 501(c)(3) bonds, Treasury may waive penalty of loss of tax exemption on bonds for errors in or late payments of rebate if error or late payment is not due to willful neglect, conditioned on payment of a penalty of up to 50% of the amount not paid. Interest accrues on amount not property paid. Treasury may waive interest or penalty. Treasury may modify require-

	ment that rebate payments be made at 5-year intervals for advance refunding bond proceeds placed in escrow and may permit issuers to use simplified accounting methods to ease the administrative burdens of compliance with rebate requirement. The last rebate payment is due 60 rather than 30 days after redemption.
The effective rate of interest on mortgage loans provided with mortgage revenue bonds could not exceed the yield on the issue by more than 1.125 percentage points. Arbitrage profits had to be rebated to the federal government or paid or credited to the mortgagor.	The prior-law restrictions on mortgage revenue bonds (including limit on amount of proceeds vested in nonpurpose obligations, see below) are retained and extended to veterans'mortgage bonds.
Treasury was directed in 1984 to prescribe regulations applying rules similar to those for IDBs to student loan bonds. The regulations have not yet been issued.	The IDB restrictions (including limit on amount of proceeds invested in nonpurpose obligations, see below) are extended to student loan bonds. A transitional exception from the rebate requirement is provided for student loan bonds issued in connection with the GSL and PLUS programs before January 1, 1989. An initial 18-month temporary period is granted during which arbitrage profits need not be rebated to the extent the proceeds of the issue are used to make or

Advance Refunding	IDBs and mortgage revenue bonds could not be advance refunded. Other tax-exempt bonds (i.e, governmental bonds, 501(c)(3) bonds, and tax-exempt private loan bonds) could be advance refunded. "Advance refunding" was refunding more than 180 days before the refunded bonds were redeemed, except for bonds with a maturity of less than three years.	Only governmental bonds and 501(c)(3) bonds can be advance refunded. Advance refunding is defined as refunding more than 90 days before the refunded bonds are redeemed. Several restrictions are placed on advance refunding: 1. Bonds issued before January 1, 1986 may be advance refunded twice. 2. Bonds issued on or after January 1, 1986 may be advanced refunded once. 3. If the original issue was on or after January 1, 1986, the refunded bonds must be redeemed no later than the first date on which their call is not prohibited if the refunding produces debt service savings. 4. If the original issue was before January 1, 1986, the refunded bonds must be redeemed no later than the first date on which the issue may be called at a premium of 3% or less if the refunding may produce a debt service savings. 5. The initial temporary period expires 30 days after

		issue for the refunding bond and the date the refunding bond is issued for the refunded bond. 6. Reserve funds and minor portions for the refunding bonds cannot exceed the lesser of the amount so dedicated in the refunded bond or the amount permitted by the bill. 7. In advance refundings of governmental bonds, the nongovernmental portion in excess of $15 million will be included in the volume cap.
Information reporting	Issuers of IDBs, 501(c)(3) bonds, student loan bonds and mortgage revenue bonds had to report information about volume and users of bond-financed facilities for each calendar quarter to Treasury.	The requirement is extended to all tax-exempt bonds. Treasury may waive loss of tax exemption for late filing of information if it is not due to willful neglect.
Minimum tax	Interest on tax-exempt bonds was not counted in calculating a taxpayer's alternative minimum tax.	Interest on tax-exempt private activity bonds is a preference item in the individual and corporate alternative minimum tax. In addition, the corporate minimum tax includes a portion of corporate book income, which may include tax-exempt interest, as a preference.

Interest expenses of financial institutions allocable to tax-exempt bonds	Financial institutions could deduct 80% of their interest expenses allocable to the purchase or carrying of tax-exempt bonds.	The deduction is repealed, except for governmental or 501(c)(3) bonds whose issuer reasonably expects to issue no more than $10 million in these types of bonds during the calendar year. Refundings of outstanding bonds may qualify for the exception and count towards the limit.
Tax-exempt interest of property and casualty companies.	Property and casualty companies whose income includes interest from tax-exempt bonds were not required to reduce their loss reserve deduction to take account of the fact that deductible additions to the reserve may come out of nontaxable income.	The deduction for losses incurred is reduced by 15% of the company's tax-exempt interest.

Prepared by
Mary S. Lyman, Tax Counsel
Chambers Associates Incorporated
1625 K Street, NW, Suite 200
Washington, DC 20006
(202) 857-0670

APPENDIX C
MEMBERS OF THE PRIVATE SECTOR ADVISORY PANEL ON INFRASTRUCTURE FINANCING

Mr. Robert O. Anderson
Atlantic Richfield Company

Mr. Dan Arnold
Chairman of the Board
First City Bancorporation of Texas, Inc.

Mr. Hector Barretto
President, U.S. Hispanic Chamber
of Commerce

Mr. Donald Beldock
Chairman
BASIX Corporation

Mr. Stephen Bell
Salomon Brothers

Dr. Pat Choate
Director of Policy Analysis
TRW, Inc.

Mr. William T. Coleman
Partner
O'Melveny & Myers

Mr. Frank D'Ercole, Esq.
Partner
Robinson & Cole

Mr. Thomas J. Donohue
President & Chief Executive Officer
American Trucking Associations

Mr. John S. Dyson
Chairman
Wakefield National Inc.

Mr. Joseph M. Egan, Jr.
President, Philadelphia Industrial
Development Corporation

Mr. Joseph M. Giglio, Chairman of Panel
Managing Director, Public Finance Division
Bear, Stearns & Company

Mr. Hyman C. Grossman
Managing Director, Municipal Ratings
Standard and Poors

Mr. Edward Hamberger, Esq.
Managing Partner
Lipsen, Hamberger, Whitten & Hamberger

Ms. Carla Hills,
Managing Partner
Latham, Watkins, & Hills

Dr. Walter Hoadley
Senior Research Fellow
Hoover Institution

Mr. Dana Huestis
President
Falls Construction Company

Admiral Bobby R. Inman
MCC

Mr. Harold S. Jensen
Partner
Metropolitan Structures

Mr. John J. Koelemij
President
Orange State Construction Company

Dr. Herman Leonard
Professor of Public Finance
John F. Kennedy School

Mr. Robert M. Leopold
Vice Chairman
Insituform of North America, Incorporated

Mr. Jack A. MacAllister
President and Chief Executive Officer
U S West

Mr. Gerald McBride
Senior Vice President
Manager, Tax Exempt Division
Prudential-Bache Securities

Mr. John McEvoy
Partner
Kutak, Rock & Campbell

Mr. Joseph L. McGavick
Partner
Deloitte, Haskins & Sells

Mr. James D. Range
Senior Director of Government Affairs
Waste Management Incorporated

Mr. Benjamin M. Rawls
Chairman of the Board
Metcalf & Eddy

Mr. Edward B. Regan
New York State Comptroller

Mr. Walter L. Revell
Chief Executive Officer
Revell & Buigas Investments
Southeast Enterprises

Mr. Nicholas A. Rudi
President
Consolidated Financial Management

Mr. Richard S. Schweiker
President
American Council of Life Insurance

Mr. Max Sherman
Dean
Lyndon Baines Johnson School

Mr. Vincent Tese
Chairman and Chief Executive Officer
NY State Urban Development Corp.

Ms. Carmen E. Turner
General Manager
Washington Metropolitan Area
Transit Authority

Mr. John Horsley
NACO Second Vice President
Chairman, Board of Commissioners
Kitsap County, Washington

Mr. Carl Young
NACO Chairman, Transportation
Steering Committee
Broome County, New York

The Honorable George V. Voinovich
Mayor, City of Cleveland, Ohio

The Honorable W. Wilson Goode
Mayor, City of Philadelphia, Pennsylvania

The Honorable Harry Kinney
Former Mayor, City of Albuquerque, New Mexico

The Honorable William J. Cole, III
Treasurer, State of Mississippi

The Honorable Michael Dukakis
Governor, State of Massachusetts

The Honorable W. Booth Gardner
Governor, State of Washington

The Honorable D. Robert Graham*
Governor, State of Florida

The Honorable Thomas H. Kean
Governor, State of New Jersey

The Honorable William A. O'Neill
Governor, State of Connecticut

The Honorable Robert D. Orr
Governor, State of Indiana

The Honorable Mark White*
Governor, State of Texas

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*Were members of the Panel through 1986.

APPENDIX D

CONTRIBUTORS TO THE PRIVATE SECTOR ADVISORY PANEL ON INFRASTRUCTURE FINANCING

ABF Freight Systems, Inc.
Fort Smith, AR

American Aggregates Corporation
Greenville, OH

American Cast Iron Pipe Company
Birmingham, AL

American Truckers Association
Alexandria, VA

Anheuser-Busch Companies
St. Louis, MO

Anixter Brothers, Inc.
Skokie, IL

ASARCO Foundation
New York, NY

Associated General Contractors
Albuquerque, NM

Associated General Contractors
Wilsonville, OR

AT&T
Washington, DC

Atlantic Richfield Company
Los Angeles, CA

BASIX Corporation
New York, NY

Bear, Stearns, Inc.
New York, NY

Bethlehem Steel Corporation
Bethlehem, PA

Beverly Enterprises
Virginia Beach, VA

Caterpillar, Inc.
Peoria, IL

Cavanaugh Tocci Associates, Inc.
Natick, MA

Consolidated Freightways
Portland, OR

Consulting Engineers, Inc.
Pasadena, CA

CSX Corporation
Richmond, VA

Cummins Engine Company, Inc.
Columbus, IN

Dresser Industries, Inc.
Washington, DC

E.I. DuPont De Nemours & Company
Wilmington, DE

El Paso Natural Gas Company
El Paso, TX

Federal Express
Memphis, TN

Federal-Mogul Corporation
Detroit, MI

First Mississippi Corporation
Jackson, MS

Florida Ice Machine Corporation
Jacksonville, FL

Food Lion
Salisbury, NC

Ford Motor Company
Dearborn, MI

Gelco Insituform, Inc.
Salem, OR

GenCorp Foundation, Inc.
Akron, OH

General Foods Corporation
White Plains, NY

General Motors Corporation
Washington, DC

General Signal Corporation
Stamford, CT

Genstar Company
San Francisco, CA

The Gifford-Hill Companies
Dallas, TX

The Goodyear Tire & Rubber Company
Akron, OH

W.W. Grainger, Inc.
Chicago, IL

The Greyhound Corporation
Washington, DC

HNG/Internorth, Inc.
Houston, TX

Honeywell Foundation
Minneapolis, MN

Houghton Mifflin Company
Boston, MA

Hubbell, Roth & Clark, Inc.
Bloomfield Hills, MI

Insituform Mid-America, Inc.
Chesterfield, MO

Insituform of New England, Inc.
North Amityville, NY

Kaiser Cement Corporation
Oakland, CA

Koppers Company, Inc.
Pittsburgh, PA

Kutack Rock & Campbell
Washington, D.C.

Lehigh Portland Cement Company
Allentown, PA

CE Maguire, Inc.
New Britain, CT

J. Marich & Sons, Inc.
Lemont, IL

Metcalf & Eddy, Inc.
Woburn, MA

J.M. Montgomery Consulting Eng.
Pasadena, CA

Moore McCormack Resources, Inc.
Stamford, CT

Mountain Bell
Albuquerque, NM

National Bank of Detroit
Detroit, MI

Naylor Industries, Inc.
Pasadena, TX

Occidental Petroleum
Los Angeles, Ca

Paccar, Inc.

Parsons Brinckerhoff
New York, NY

Price Brothers Company
Dayton, OH

The Procter & Gamble Company
Cincinnati, OH

Prudential-Bache Securities, Inc.
New York, NY

RJN Environmental Associates, Inc.
Wheaton, IL

Roadway Services, Inc.
Akron, OH

Rubbermaid, Inc.
Wooster, OH

Sithe-Energies U.S.A., Inc.
Los Angeles, Ca

Salomon Brothers
New York, NY

Standard & Poors Corporation
New York, NY

The Standard Oil Company
Washington, DC

3M
St. Paul, MN

Trammell Crow Family Foundation
Dallas, TX

Transco Energy Company
Washington, DC

Union Oil Company of California
Los Angeles, CA

United Parcel Service
Greenwich, CT

U.S. Steel Corporation
Pittsburgh, PA

Waste Management Incorporated
Oak Brook, IL

J. McDonald Williams
Dallas, TX

Woodward-Clyde Consultants
San Francisco, CA

Yellow Freight Systems, Inc.
Overland Park, KS

APPENDIX E
List of Witnesses Before The Private Sector Advisory Panel on Infrastructure Financing
(By Hearing)

Washington, D.C. Hearing
January 21 & 22 1986

The Honorable Pete V. Domenici
Senator, New Mexico

The Honorable Jim Sasser
Senator, Tennessee

The Honorable Robert T. Stafford
Senator, Vermont

The Honorable William J. Cole, III
Mississippi State Treasurer

Mr. John Petersen
Director
Government Finance Research

Ms. Elizabeth Hollander
Director of Planning
City of Chicago

Mr. David L. Bodde
Assistant Director
The Congressional Budget Office

Mr. Richard R. Mudge
Chief, Public Investment Unit
The Congressional Budget Office

Dr. Wilbur A Steger
President
CONSAD Research

Mr. James Perkins
President
National Ass'n of Bond Lawyers

Mr. Prescott Bush
Co-Chairman
Privatization Council

Major General H.J. Hatch
Director of Civil Works
United States Army Corps of Engineers

Mr. Ralph Stanley
Administrator
Urban Mass Transit Administration

The Honorable Palmer DePaulis
Mayor, City of Salt Lake City, Utah

The Honorable George C. Voinovich
Mayor, City of Cleveland, Ohio

The Honorable Doug Sutherland
Mayor, City of Tacoma, Washington 98402

Mr. John Horsley
Chairman, Board of Commisioners
Kitsap County, Washington

Ms. Roberta Savage
Executive Director
Ass'n of State & Interstate Water Pollution Administrators

Mr. James Martin
Director of Public Works
City of Fresno

Mr. William Rose
American Institute of Architects

Mr. Lester H. Poggemeyer
American Consulting Engineers Council

Mr. Robert Emrie
Water & Wastewater Equipment Manufactures Assn

Mr. James Cloar
Executive Vice President
The Urban Land Institute

New Mexico Hearing
Albuquerque, New Mexico
April 4, 1986

State Representative Richard Chaney
Farmington, New Mexico

Mr. David Vargas
Director, Local Government Division
Department of Finance and Administration

Mr. Denise Fort
Director
Environmental Improvement Division
New Mexico Dept. of Health & Environment

Mr. Charles L. Miller
Director
Arizona State Department of Transportation

The Honorable Ken Schultz
Mayor, City of Albuquerque, New Mexico

Mr. Marion Cottrell
Chairman of County Commission
Bernalillo County, New Mexico

Mr. Ed Archuleta
Public Works Department
Albuquerque, New Mexico

Mr. Nick Jenkins
Vice-President
New Mexico Association of Counties

Mr. Montrose G. Simms
Assistant Director
Department of Finance & Management
Albuquerque, New Mexico

Mr. Arthur A. Blumenfeld
Past President
Government Finance Officers Association

Mr. Lorenzo Larranaga
Secretary
New Mexico State Highway Department

Mr. Fred O'Cheskey
Public Service Company
Albuquerque, New Mexico

Mr. Franklin Jones
Sutin, Thayer and Browne

Mr. Tom B. Ratcliff
General Partner, Boettcher & Co.

Mr. Barry Gray
Vice-President, Quinn & Co.

New Jersey Hearing
Trenton, New Jersey
April 7, 1986

The Honorable Peter H. Kostmayer
U.S. Congress, 8th District, Pennsylvania

The Honorable Feather O'Connor
New Jersey State Treasurer

Mr. Richard Dewling
Commissioner
New Jersey Department of Environmental Protection

Mr. Roger Bodman
Commissioner,
New Jersey Department of Transportation

Mr. Bruce Bohlen
Assistant Treasurer,
Port Authority of New York and New Jersey

Mr. Bruce Coe
President
New Jersey Business & Industry Association

Mr. James J. Hughes, Jr.
Executive Director
New Jersey State Econ Development Authority

The Honorable W. Wilson Goode
Mayor, City of Philadelphia, Pennsylvania

Mr. Ernest Leonardo
City Planning Commision
Philadelphia, Pennsylvania

Mr. William Morrazzo
Commissioner,
Philadelphia Water District

Ms. Mary Harris
South-Eastern Pennsylvania Transit Authority

Mr. William Hankowsky
First Senior Vice President
Philadelphia Industrial Development Corporation

Mr. Michael Wolf
Vice-President,
Dolphin & Bradbury

Mr. William Mathesius
County Executive
Mercer, NJ

Dr. Richard Moore
Woodrow Wilson School
Princeton University

Indianapolis Hearing
Indianapolis, Indiana
May 19, 1986

The Honorable Robert D. Orr
Governor, State of Indiana

Mr. William Watt
Chairman, Transportation Coordinating Board

Mr. John P. Isenbarger
Director, Department of Highways

Mr. Riad Shaheen
Chief Executive Officer
Long Electric Company, Inc.

Mr. Les Berthy
Managing Director
Irwin Union Capital Corporation

Mr. Brian Bosworth
President, Indiana Economic Development Council

Mr. Graham S. Toft
Director
Office of Fiscal and Management Analysis

The Honorable Carolyn B. Mosby
State Senator, Gary, Indiana

The Honorable Steve Moberly
State Representative, Shelbyville, Indiana

The Honorable James Riehle
Mayor, City of Lafayette, Indiana

The Honorable Sonya Magerum
Mayor, City of West Lafayette, Indiana

The Honorable John Mutz
Lt. Governor, State of Indiana

Mr. Jeffrey D. McConnell
Executive Director
Indiana Bond Bank

Mr. George Gavitt
Mr. James Shanahan
Ice, Miller, Donadio & Ryan

Mr. King R. Traub
President, Traub & Co., Inc.

Mr. Cecil M. Fritz
President, City Securities

Mr. Thomas B. Summers
President, Summers & Co., Inc.

Mr. John Evans
Vice-President, Economic Development
Indiana Chamber of Commerce

Mr. George E. Hughes, Jr.
President
E. H. Hughes Co.

Mr. Robert F. Bauer
Controller
Southwestern Portland Cement Co.

Mr. Joseph Fragomeni, Sr.
Chairman
Cole Associates

Mr. Kenneth Traylor
Porter County Engineer

Mr. Norman E. Tufford
Executive Director
Northwestern Indiana Regional Planning Commission

Mr. Gene Amlin
Director
Marion Utilities

Mr. Harold Michael
School of Civil Engineering
Purdue University

Mr. Mark Houck
School of Civil Engineering
Purdue University

For the Record (Indianapolis):

The Honorable Dan Quayle
U.S. Senator, State of Indiana

The Honorable Lawrence M. Borst
State Senator, Indianapolis, Indiana

Mr. Fred L. Armstrong
City Controller, Indianapolis, Indiana

Mr. David M. Wagner
Deputy Commissioner, Department of Environmental Management

Witness List: Seattle Hearing
Seattle, Washington
June 9, 1986

Mr. Richard Thompson
Director
Department of Community Development

Mr. Robert Anderson
Chairman
Washington Public Works Board

Mr. Carol Jolly
Water Quality Program Manager
Department of Ecology

Mr. Yvonne Addington
Manager
Community Development Program &
Lottery Public Works Program
Department of Ecology

Mr. John Horsley
Chairman, Board of Commissioners
Kitsap County, Wa.

Mr. Tim Hill
King County Executive

Mr. Alan Gibbs
Executive Director
METRO

Mr. Delores Sibonga
Chairperson, Finance & Personnel
Seattle City Council

Mr. Gary Zarker
Budget Director
Office of Management and Budget
City of Seattle

Mr. Benjamin J. Thompson
City Engineer
Tacoma, Washington

Mr. Hugh Spitzer
Partner
Roberts & Shefelman

Mr. Ron Doctor
Manager
Arthur Young, & Co.

Mr. Dean J. Torkelson
Senior Vice-President
Seattle First National Bank

Mr. Alan Dashen
Vice President
Seattle Northwest

For the Record (Seattle):

The Honorable J. McDermott
State Senator, Washington

The Honorable George Walk
State Representative
Chairman, House Transportation Committee

Acknowledgments

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George Meier with the Florida State Office of Planning and Budget, Brian Bosworth and Graham Toft of Indiana's Infrastructure, Inc., Brent Andrews with New Jersey's Department of Environmental Protection, Janet Beinke of the Texas Research League, and Steven Hodes of the Washington State Department of Community Development provided liaison and direction for the state studies and assisted with the public hearings.

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